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ABSTRACT

The operation of the Ohio College Library Center (OCLC) on-line bibliographic system in Texas and New Mexico Libraries was evaluated. The economic aspects of automated cataloging and card production were compared with previous methods; the effectiveness of the system as a tool for pre-order searching was evaluated; and the impact of the system's use on interlibrary loan was determined. Both academic and public libraries participated in the extensive evaluation. Appendixes contain a statement of research methodology, profile and terminal data, reports of site visits, and a glossary. (JY)

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IUC/OCLC NETWORK EVALUATION: FINAL REPORT

AUGUST 31, 1975

WESTAT, INC.
ROCKVILLE, MARYLAND, 20852

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COMMENTS

ON THE

IUC/OCLC NETWORK EVALUATION:

FINAL REPORT

September 30, 1975

Evaluation Advisory Committee
IUC/OCLC Network

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COMMENTS

The IUC/OCLC Network Evaluation: Final Report is a product of a seven-month study of the network operation made possible by the high level of interest and concern of all the participating libraries in Texas and New Mexico and by the many hours of preparation and data collection by library staff members. This study was the initial effort to evaluate the effect of the Ohio College Library Center (OCLC) system on libraries in the Southwest during the first year of operation. The study, also, is the most extensive effort to date to evaluate the OCLC system in a group of libraries.

The IUC/OCLC Network (now the AMIGOS Bibliographic Council Network) funded the evaluation project with grants from LSCA Title III funds from the Texas and New Mexico State Libraries. The purpose of the evaluation for the academic libraries was to measure the impact of the OCLC operation on their respective libraries during the first year of operation, and for the public libraries the economic feasibility of remaining in the system after a year of operation. The evaluation also was to help other libraries determine the feasibility of participating in the OCLC system.

The contractor understood and agreed to these purposes of the study and was prepared to carry out the study to achieve these purposes. Unfortunately, the collection of the data and particularly the analysis of the data, specifically in regard to cost comparisons with former systems, resulted in generalities or misinterpretations rendering the report far less useful than had been anticipated.

Although this Final Report is somewhat of a disappointment to the Evaluation Advisory Committee, which represented the libraries with the evaluation contractor, the Committee believes there are significant findings in the Final Report that are not adequately identified without reading the whole report. For these reasons, the following selected findings are presented in a cursory fashion for your review.

Academic library findings

The average time spent inputting a cataloging record declined over the period of the study.

The average time spent on the average acquisition search on the terminal declined over the period of the study.

Small libraries used the terminals for more purposes other than routine cataloging than did the larger libraries.

Revision rates and time spent per record produced was highest in medium-sized libraries.

There was a radical decrease in routine cataloging using other than OCLC records.

Large libraries processed twice the number of items per terminal on the average than small libraries.

Large Texas libraries experienced a 50% increase in monographic cataloging production.

Small libraries experienced significant decreases in activities involved with routine and original cataloging.

Large libraries had increases in original cataloging.

Medium-sized libraries experienced fewer effects from the OCLC operation than the small or large libraries.

A shift from professional to support staff using terminals during the later months of the study was indicated.

Cataloging from OCLC records was 78% of all volumes processed for the New Mexico libraries.

Original cataloging increased by 45% for the New Mexico libraries.

A downward trend in time spent per item cataloged was evidenced by the New Mexico libraries.

The average number of new titles processed monthly increased for the New Mexico libraries.

Routine cataloging activities were reduced in the New Mexico libraries.

Original cataloging of monographs decreased over the period of the study.

Overall cataloging staff costs decreased over the period of the study.

Public library findings

84% of all volumes processed on the terminals were from OCLC records.

26% of all records found required classification or other major revision.

Only 6% of all records found were acceptable without revision.

The per title unit cost was significantly lower using the OCLC processing rather than the manual processing in the parallel operations at Dallas Public Library.

For many of the libraries in the Network, the OCLC operation has proven to be cost effective in terms of increased cataloging production, staff reductions, and improved staff time effectiveness in acquisitions and interlibrary loan activities. While library expenditures for salaries, wages, equipment, and supplies were increasing at a much higher rate, unit processing costs per volume for all libraries increased an average of only 4% during the initial start-up year using the OCLC system. In addition,

the libraries have received intangible benefits from participating in the Network. The general awareness of the need to analyze all technical processing operations in order to utilize the potential of the OCLC system has been particularly noteworthy. Also, there is a growing consciousness of the interrelations of all internal library activities and of the importance of relations among libraries. Librarians in reference and interlibrary loan activities have been given new perspectives and opportunities to improve service, and catalogers have a new stature and relevance as a result of the OCLC operation.

The Committee wants to thank all the participating libraries that collected the data and the staff of the Interuniversity Council and the AMIGOS Network who assisted with the study. We especially want to thank the New Mexico State Library and the Texas State Library which provided funds for this evaluation study.

Questions concerning this study should be addressed to the AMIGOS Bibliographic Council, P. O. Box 688, Richardson, Texas 75080.

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IUC/OCLC NETWORK EVALUATION
FINAL REPORT

Submitted to:

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Submitted by:

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August 31, 1975

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The cooperation and assistance of library staff members and student assistants in all of the participating libraries is gratefully acknowledged. Their willingness to undertake a lengthy and detailed data collection task in addition to their regular duties made this study possible.

Additionally, special thanks are due Ms. Barbara Gates, IUC library coordinator, both for providing valuable data and acting as a communications liaison with participating libraries. We are also grateful to Mr. James Dodson and members of the evaluation committee for their assistance and advice concerning the study. Our study consultant, Dr. Evelyn Moore, participated throughout all phases of the study and we are indebted to her for her valuable contributions.

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PART I

STUDY OVERVIEW

This report, the final documentation of the project "An Operational Evaluation of the IUC/OCLC Network," contains material of potential interest to the range of libraries participating in, or considering participation in, the OCLC system. In an attempt to direct readers to the material most relevant to their situations, the report has been divided into three parts:

I. Study Overview

II. Academic Library Results

III. Public Library Results

Part I contains material related to the overall study, including a description of the study and its results (Chapter 1), a chapter on generalized results (Chapter 2), and discussion of comparisons between manual and OCLC processing costs (Chapter 3). Overall conclusions are suggested in Section 1.3 beginning on page 10.

Part II covers academic libraries, including a summary introduction and chapters on all academic and New Mexico academic libraries, Chapters 4 and 5 respectively. Public libraries are the topic of Part III, again with a summary introduction. The chapters included in the public library part cover OCLC use in all public libraries (Chapter 6), the parallel system operation of Dallas Public Library (Chapter 7), and the cooperative program between the Irving Public

Library and the Irving Independent School District (Chapter 8). The reader interested in public or academic library results only should read Chapter 1 and Part II or III as appropriate.

The appendices to this report also contain important information on the conduct of the evaluation study. The methodology utilized is summarized in Appendix A. Appendices B and C contain profile and terminal use data respectively, providing the basis for many of the results presented throughout the text. Appendix D presents reports of ten site visits made to participating libraries. For convenience of location, the final Appendix is a glossary covering terms as defined for use within the evaluation study. Reference to the glossary is essential, particularly for definitions of terminal uses and cataloging activities.

1. INTRODUCTION AND SUMMARY

1.1 Background and Objectives

The overall objective of the study was the evaluation of the operation of the OCLC on-line bibliographic system in Texas and New Mexico libraries participating in the IUC/OCLC Bibliographic Network. This was to include consideration of the economic aspects of cataloging and card production in the OCLC system as compared to previous operations, evaluation of the effectiveness of the system as a tool for pre-order searching, and identification of the impact of the system's use on interlibrary loan procedures.

The decision of the Ohio College Library Center (OCLC) to extend service beyond the Ohio border has provided libraries in other states with the opportunity to participate in one of the most ambitious library automation programs since the Library of Congress' inception of the MARC program in the early 1960's. The Interuniversity Council of the North Texas Area's contract with OCLC made available OCLC's services to libraries in Texas and New Mexico. The expanded IUC/OCLC Bibliographic Network is now known as the AMIGOS Bibliographic Council.

In the past, no matter how standardized the source data, technical processing procedures, especially subject and descriptive cataloging, developed independently from library to library. In response to past history and local demand, libraries differ on how much professional time is devoted to cataloging, on how much original cataloging is done, and also on what card format to use. Even the acceptance of LC copy "as is" has not prevented libraries from modifying glaring discrepancies from local procedures. The end result of the above has been the long-recognized expensive duplication of cataloging services.

Since interlibrary loan of periodicals and monographs is on the rise, the usefulness of union lists in identifying source libraries is also increasing. So is the cost of developing and updating such union lists. Costs of acquisitions and acquisitions processing are also of concern as materials available increase faster than budgets.

Developing networks such as AMIGOS offer an alternative solution to the problems cited above. The OCLC data base provides on-line access to more that a million precataloged records. Orders can be searched. Catalog cards can be produced off-line (taking advantage of already-existing data). Current locations for interlibrary loan items can be identified. And with the new serials control system, both check-in and union list maintenance will be facilitated.

The original objectives of the contract with OCLC were to:

- Reduce the increases in technical services costs;
- Secure quality cataloging equal to that used prior to the tie-in;
- Build a machine readable data base of participating library holdings;
- Hasten movement of materials by improved in-house processing procedures;
- Stimulate review and revision of individual library operations; and
- Provide a framework for staff development, leadership, and interlibrary cooperation in the Soutnwest.

In identifying the impact of the OCLC contract and system on these objectives, questions like the following arise:

a. The OCLC system, along with MARC and library-cataloged materials, provides the opportunity for individual libraries to modify individual records without affecting the master file, allowing libraries both standardization and individualization. How have libraries utilized these capabilities? What effect has there been on unit costs of cataloging?

b. An expensive item in interlibrary loan processing is searching/verification. OCLC provides a huge data base from which to draw. Can this data base, developed initially by other libraries, be effective for Texas and New Mexico libraries? How soon will within-Texas and within-New Mexico locations begin to show up so that interlibrary loan transactions will be facilitated?

c. Does the OCLC data base facilitate order searching? What impact does the knowledge of other librarys' holdings have on the acquisition decision?

d. For all types of OCLC system use what is the time differential between the new activities and those which they replace? Does this contribute to reduction in total processing time? Is the elapsed time for processing less?

e. Membership in the AMIGOS Network necessitates adoption of new skills and techniques. This requires that library staffs adapt. What impact has this had on the procedures and staffing requirements of the cataloging department?

The following report will attempt to examine these sorts of issues, with particular emphasis on processing volume, time, and costs.

1.2 Scope of Study

This study officially began on August 1, 1974 and continued over a year's period, with continuous data collection over seven months of the year. During the first few weeks of August, questionnaire design and data collection planning were initiated. Attention was directed to the three departments under consideration:

- Cataloging Department
- Order Department
- Interlibrary Loan Department

To meet the study purposes, four background questionnaires were developed. One was directed at each of the above departments and one at the general library. These initial questionnaires yielded information concerning size, costing, and procedures. A summary of these data contributes to the profile of each institution as shown in Appendix B. Additional discussion of these questionnaires appears in Appendix A, Methodology, and the questionnaires themselves are exhibited in Attachment A.

Evaluative data were collected over a seven month period beginning in November 1974. Ten forms were designed to produce data for the various areas of investigation. (Description and collection techniques are available in Appendix A, Methodology; the forms and procedures are available in Attachment A.) The forms provided extensive data on use of the terminal, times and volume for cataloging, pre- and post-order searching and ILL searching (both through OCLC and otherwise), and also in-depth information concerning sampled titles for each activity.

Site visits to ten libraries yielded further characteristic data which could not otherwise be gathered. Descriptions of these visits can be found in Appendix D.

Twenty-two Texas and New Mexico libraries operating 30 terminals were studied. Among these, three public libraries, one school district library system and one state library system were included. The remainder are academic institutions. The twenty-two libraries and their OCLC operational dates are as follows:

Academic - Texas	Operational Date
Austin College	July 5, 1974
Baylor University	July 20, 1974
Bishop College	August 22, 1974
Dallas Baptist College	July 5, 1974
East Texas State University	June 26, 1974
North Texas State University	April 29, 1974
Southern Methodist University	May 3, 1974
Texas Christian University	June 21, 1974
Texas Woman's University	June 21, 1974
Texas Tech University	Septmber 5, 1974
University of Dallas	June 26, 1974
The University of Texas at Arlington	July 5, 1974
The University of Texas at Austin	July 15, 1974
The University of Texas at Dallas	April 29, 1974

Academic - New Mexico	Operational Date
Eastern New Mexico University	October 9, 1974
New Mexico State University	September 23, 1974
University of New Mexico	September 5, 1974
Public	
Dallas Public Library	November 19, 1974
Fort Worth Public Library	October 14, 1974
Irving Public Library	November 20, 1974
School	
Irving Independent School District	November 20, 1974
State	
Texas State Library	October 1, 1974

The reader should note that results of this study indicate performance of the 22 library system and are not generalizable to individual libraries or to other systems. As is suggested above and confirmed by their profiles (Appendix B), the libraries examined were diverse in size, collection and operations. Thus, generalizations concerning OCLC effectiveness or costs for any other system are unjustified. In addition, though patterns may be suggested by the information provided, effects upon any individual library system cannot be discerned in depth. Finally, various unique conditions existing within certain of the libraries beyond the introduction of OCLC, hinder generalization. Such factors as increased acquisitions, insufficient staff, budget difficulties, and LC conversion made this an unrepresentative year for several participating libraries.

Particular attention should be drawn to the limitations of comparisons in the report between manual cataloging systems and OCLC cataloging systems. This information must be viewed as only suggestive of changes which may have occurred. These portions of the report are based exclusively upon data supplied by the Dallas Public Library, the only library operating parallel systems throughout the study, and upon estimates provided in the background questionnaires.

It should be noted that this study does not pretend to encompass all the effects of the introduction of OCLC into Texas and New Mexico. The psychological implications, quality of cataloging, visual problems associated with extended terminal use and several other facets fall outside the realm of this project. Site visits and background questionnaires did yield some insights into these areas however.

1.3 Summary of Findings

The number of libraries participating in the study, with their varying sizes and types, presented a particularly good basis for analysis. However, for the same reason, many difficulties in both data collection and analysis arose. Though definitions were provided for the study, terms used (title, volume, original cataloging, etc.) are interpreted differently from library to library. Various methods of statistical record-keeping employed in each library often conflicted with data requested for this evaluation.

Due to the size of the population studied, adequate control and determination of these variances proved infeasible. Too, the size of the population prevented in-depth analysis on an individualized basis, except for the parallel systems at Dallas Public Library. Further, the data collection requirements of this study were especially time consuming both to the libraries involved and to analysis.

Perhaps a fundamental difficulty in the study was the lack of existing studies which could have provided guidelines and, by their findings, also eliminated many of the data requirements for this study.

Despite these limitations this report presents substantive information regarding the introduction of OCLC into Texas and New Mexico. Examination is made of terminal use, and selected cataloging department, interlibrary loan and order department costs. For each of these categories, trends in thruput, find ratios and unit times were studied. Results are summarized below, with additional results presented in the introductions to Parts II and III, Academic Libraries and Public Libraries respectively.

Terminal utilization as presented in Chapter 2, Generalized Results, averaged 6.5 hours per day. As with all data collected, wide ranges were observed among the libraries studied, and the resulting variances must be kept in mind. For the academic libraries, utilization is proportionate to the size of library. Public library utilization fell sharply below the average (4.5 hours per day) and varied significantly from library to library. Generally, routine cataloging accounted for 66 percent of terminal time, ranging from 51 percent in small academic libraries to 85 percent in public libraries. OCLC cataloging find ratios averaged about 69 percent, ranging from 65 percent in large academic libraries to 74 percent in medium academic libraries. The find ratio, though apparently unaffected by the subject of the publication, is related to the date of publication and ranges from 51 percent for pre-1963 publications to 71 percent for post-1972 publications.

Average searching costs and comparisons between bibliographical tools presented for interlibrary loan and order searching are relevant not only to OCLC but manual processes as well. Order searching averages 12.1 minutes per search. Since terminal searching is about 1.9 minutes per item the bulk of searching time must be attributed to searching other tools. A decrease in per item searching time of 1.3 minutes, or about 10 percent, over the study was noticed. Cost, however, increased from $.65 to $.69 per search. Find ratios for OCLC order searching are good -- 71 percent as opposed to 73 percent in NUC and 69 percent in publishers' lists. In examining the find ratio by subject and date of the publication, OCLC exhibits a comparatively high find ratio for science and technology, as well as post-1973 publications.

Interlibrary loan searching averaged 21.4 minutes per borrowing request at a staff cost of $1.52. Terminal searching averaged 2.4 minutes per search, indicating that

most ILL searching time is devoted to other tools. Use of the OCLC terminal for interlibrary loan ranges greatly among participating libraries. The OCLC find ratio was far lower than for other types of OCLC searching -- 42 percent as opposed to 69 percent in cataloging and 71 percent in order searching. The highest find ratio was observed in the National Union Catalog (66 percent) followed by the Texas Numeric Register (51 percent). Again, OCLC searching was observed most successful for post-1972 publications. For items not found in a bibliographic source, the likelihood of its being filled is about 55 percent while if found in a bibliographic source the probability of its being filled is about 79 percent. Forty-six percent of within-state requests are responded to within five days of request while 7 percent of out-of-state requests are answered within this time. As noted from site visit interviews, OCLC verification is notably more accurate and current than other sources.

In later sections cataloging costs examined indicate an overall decline in original cataloging costs for small academic and public libraries. For medium and large academic libraries, original cataloging costs increased. The costs of routine cataloging with cards or card copy decreased in large and small academic and public libraries, while remaining stable in medium libraries. Comparison of budgeted expenditures between 1973-74 and 1974-75 divided by total volume thruput shows an overall increase of $.16 per volume.

At Dallas Public Library, where parallel operations were conducted, time spent in processing volumes through OCLC was about .6 minutes less per volume than in manual processing. However, OCLC per volume costs were about $.49 more than manual processing. Derivation of this figure is shown in Chapter 7, Dallas Public Library.

In Appendix D the site visits conducted during the study are discussed. From these interviews, it should be noted that most library staffs were enthused about OCLC and its future capabilities (e.g., serials control, and as a union catalog). In this light, initial problems of system adoption noted can be overcome.

In summary, we find that though OCLC may not reduce cataloging costs by any measure, time devoted to selected cataloging activities has decreased. This may provide a reduction in the increase of cataloging costs. To this should be added the advantages of OCLC as a bibliographical tool and a union catalog as well as a basis for other future services. It is hoped that this study has provided not only a concrete basis for future study, but also some insights into each library's use of OCLC, its functioning, strong and weak points, and a tool for self-assessment in the future.

1.4 Recommendations for Future Study

Due to the wide scope of this study, many areas are left for in-depth examination. In evaluating what has yet to be investigated we recommend the following areas for consideration:

- Manpower needs and workflow changes required by OCLC
- Controlled manual and OCLC system comparisons
- Other possible uses of OCLC (e.g. reference, card catalog replacement) and investigation into full utilization for ordering and interlibrary loan purposes

- Cooperation possibilities for OCLC participating libraries in such areas as interlibrary loan and cooperative acquisitions
- Systematic investigation of terminal use, queue and terminal turnaround by time of day
- Network, administrative and consulting requirements
- Development of a cost model to estimate break-even points
- OCLC system capacity.

2. OCLC SYSTEM RESULTS

The following sections are based on data received from all participating libraries. It should be remembered that the data given here represent a wide range of libraries and hence may not represent the use of OCLC in any individual library.

2.1 OCLC Terminal Use

Data for this section were provided by the OCLC log sheet (Exhibit 5 of Attachment A). Elements included were:

- Number of items;
- Type of use (cataloging, input, updates, use by order and interlibrary loan departments, training and demonstration);
- Cataloging records found;
- Disposition of cataloging records (accept, revise, reject, hold);
- Time spent at terminal; and
- Down time.

For analysis, 25 days, distributed over the seven month data collection period and equally representing the normal days of a working week, were sampled. These days, then, were used to construct five intervals of one week apiece. All transactions for the twenty-five days were considered in measuring learning curve development, allocation of terminal time by type of use, available unused time, character of cataloging disposition and patterns of use by other departments.

The data on terminal use for each sample day are summarized by day in Tables C-1 and C-2 of Appendix C. These tables provide an overview of change and lack of change in basic processing statistics during the seven months from November 1974 to May 1975.

Tables 2-1 and 2-2 present time and volume summaries for each identified type of terminal use. Individual results for each type of use follow.

Table 2-1. Average daily time at terminal by type of use

Type of Use	Average daily time at terminal	Percent of total time at terminal
Cataloging from OCLC records	258 minutes	66%
Input-original cataloging	36	9
Input-routine cataloging	26	7
Record updates	17	4
Order department use	30	8
ILL department use	4	1
Other	20	5
Total	391 minutes	100%

The types of use shown in Tables 2-1 and 2-2 are the categories used by terminal operators to record their usage on Form 1, the Terminal Log Sheet. Definitions of these activities are presented in the Glossary (Appendix E). Time and volume figures shown were calculated by summing all reported uses and dividing by the number of terminal days for which reports were received. Over the 25 sample days, reports were received for 689 of the 750 total terminal days. Reports reflecting no use are included in the averages shown. A more detailed discussion of methodologies including the sample dates is given in Appendix A, Methodology.

Table 2-2. Average daily volume processed at terminal by type of use

Type of Use	Average daily volume processed	Percent of total volume processed
Cataloging from OCLC records	60 items	66%
Input-original cataloging	3	3
Input-routine cataloging	2	2
Record updates	8	9
Order department use	16	18
ILL department use	2	2
Total	91 items	100%

In order to identify changes in results over time, Tables 2-3 and 2-4 present the data in groups of five sample days comprising five complete working weeks. Table 2-3 is an index of time utilization over the study period. Percent of time spent on routine cataloging declined significantly, from 71 to 63 percent, but routine cataloging remains the major activity. Cataloging input has remained relatively stable around 16 percent, as has interlibrary loan at one percent and order department use at about eight percent. The slight increase in time spent on record updates is to be expected as the volume of records updated also increased (see Table 2-4). Use for ILL (two percent) and inputting volume (six percent) have remained stable as their respective time indices would indicate. Cataloging from OCLC records also follows the downward pattern (from 72 to 64 percent) shown in Table 2-3. Order department volume, on the other hand, fluctuates somewhat, but accounts for an overall average of seventeen percent of all volume thruput.

Table 2-3. Index of time utilization by type of terminal use

Sample Days	Category of use: Routine cataloging from OCLC records	Input: Original	Input: Routine	Record updates	Order department use	ILL department use	Other	Total
1-5	.71	.08	.06	.02	.07	.01	.05	1.00
6-10	.67	.10	.09	.03	.07	.01	.03	1.00
11-15	.64	.09	.06	.05	.09	.01	.06	1.00
16-20	.65	.09	.06	.06	.08	.01	.05	1.00
21-25	.63	.10	.07	.05	.08	.01	.06	1.00
1-25	.66	.09	.07	.04	.08	.01	.05	1.00

Table 2-4. Index of record utilization by type of terminal use

Sample Days	Category of use: Routine cataloging from OCLC records	Input: Original	Input: Routine	Record updates	Order department use	ILL department use	Total
1-5	.72	.03	.02	.03	.18	.02	1.00
6-10	.73	.03	.03	.05	.14	.02	1.00
11-15	.64	.03	.03	.07	.21	.02	1.00
16-20	.60	.03	.02	.15	.18	.02	1.00
21-25	.64	.04	.02	.12	.16	.02	1.00
1-25	.66	.03	.03	.09	.17	.02	1.00

2.1.1 Routine Cataloging Using OCLC Records

Routine cataloging using OCLC records is defined as the search of the OCLC data base for a cataloging record of a specific title. If a catalog record exists, cataloging information is adjusted to library specifications and cards are ordered. If the title is not found in the data base, the type of use is still within this category. Tables 2-5 and 2-6 give average daily volume and average daily time, respectively, for cataloging from OCLC records. Figures given cover only terminals actually in operation, and exclude terminals down or not used.

It was expected that, as libraries gained experience, volume of cataloging thruput would increase. This seems not to have occurred; instead, a fluctuating thruput is evident in Table 2-5. Contributing influences include turnaround times, average on-line cataloging time, and the irregular nature of book receipts.

As evidenced in Table 2-6, time spent on on-line cataloging appears similarly unpatterned. Generally, four to five hours daily are spent on this terminal activity, accounting for an average of 66 percent of terminal time used. The proportion of time has declined from an initial 71 percent to nearly 60 percent, reflecting increased utilization of the terminal for other purposes. If OCLC proves useful to other departments, percent of time spent cataloging from OCLC records should continue to decline.

Table 2-5. Average daily volume processed at terminal for cataloging from OCLC records

Sample Days	Average daily volume processed	Percent of total volume processed
1-5	63 items	72%
6-10	62	73
11-15	56	64
16-20	65	60
21-25	59	64
1-25	61 items	66%

Table 2-6. Average daily time at terminal spent in cataloging from OCLC records

Sample Days	Average daily time at terminal	Percent of total time at terminal
1-5	285 minutes	71%
6-10	255	67
11-15	262	64
16-20	275	65
21-25	236	63
1-25	263 minutes	66%

Table 2-7 displays the "find" ratio achieved in searching the OCLC base for cataloging records, that is, the number of appropriate records found in relation to the number of searches made. Three variations of the "find" ratio are illustrated in this table. The simple "find" ratio is derived directly from raw data without consideration of either records rejected or held. If only utilized or "useful" records are to be considered finds, then some adjustment is necessary for rejected records. Rejection, though, does not necessarily indicate a faulty or unuseful record. Hence, these records have been eliminated from both search (denominator) and find (numerator) totals. This corrected "find" ratio is shown in column two of Table 2-7. The variation between the simple

Table 2-7. "Find" ratio for routine cataloging using OCLC records

Sample Days	Simple "find" ratio	Corrected "find" ratio*	Adjusted "find" ratio**
1-5	75%	74%	70%
6-10	71	71	67
11-15	76	76	74
16-20	74	73	70
21-25	69	69	64
1-25	73%	73%	69%

*eliminating rejected records from both numerator (found) and denominator (searched)

**eliminating rejects and records recalled from save or retrieved by OCLC number from both numerator and denominator

and corrected "find" ratio is minute. Further refinement is necessitated by the practice of holding or "saving" records. If holds may be characterized as items retrieved by OCLC number or from save files rather than by normal search routines then they inflate the "find" ratio significantly, since they are items which have already been searched and are known to be present. Thus the third column of Table 2-7 presents the adjusted "find" ratio found after subtracting holds from both search and find totals.

Table 2-7 indicates the fluctuations in "find" ratios. Generally the simple "find" ratio was 73 percent, as was the corrected "find" ratio. Since several libraries regularly save certain records, the adjusted "find" ratio is somewhat lower than the first two ratios, averaging 69 percent. Variations in the find ratios can be attributed to the various types of material searched, which is known to include several categories of materials not expected to be in the data base (e.g., pre-1956 imprints and special collections). Later discussion of data base results (Section 2.3) suggests the variance in "find" ratio caused by type of material.

Table 2-8 is an index of disposition for OCLC records located. As indicated, the overall rates for disposition have varied little. The acceptance rate was generally 38 percent. Classification and major revisions of records located were needed for 15 percent of the records, while 22 percent of the records required other more minor revisions. The combined revision rate has remained relatively stable at 37 percent. Records held have often been revised and need review, which would inflate the revision rate somewhat. The holding rate has remained stable over time, as has the rejection rate of one percent.

Table 2-8. Index of disposition of OCLC records found in the data base

Sample Days	Category of Disposition						Total
	Accepted	Revised		Held	Rejected	Unknown	
		Classification and major	Other				
1-5	.39	.12	.22	.19	.01	.07	1.00
6-10	.40	.17	.21	.17	.01	.04	1.00
11-15	.40	.17	.19	.18	.01	.05	1.00
16-20	.38	.14	.24	.16	.02	.06	1.00
21-25	.34	.15	.22	.19	.01	.09	1.00
1-25	.38	.15	.22	.18	.01	.06	1.00

Average time for searching cataloging records, as indicated by Table 2-9, was generally 4.3 minutes. This included both successful and unsuccessful searching. Spreading the total time spent only over successful searches (cataloging records found), average time was six minutes. As noted previously, this figure represents double counting of records held and later recalled. Correcting for this factor, average time (including hold time) per item cataloged is 7.4 minutes. All times shown fluctuate somewhat over the sample period, peaking at days 11-15 but showing a general decrease. As would be expected, average time increases and decreases with the "find" ratio (see Table 2-7), reflecting the greater amount of time spent when records are found in the data base.

Table 2-9. Average times per item for routine cataloging using OCLC records

Sample Days	Average time per item searched or recalled	Average time per item cataloged*	Average time including hold time per item cataloged**
1-5	4.5 minutes	6.2 minutes	7.7 minutes
6-10	4.1	5.8	7.1
11-15	4.7	6.3	7.7
16-20	4.2	5.8	7.0
21-25	4.0	5.9	7.3
1-25	4.3 minutes	6.0 minutes	7.4 minutes

*rejects not included as items cataloged
**neither hold nor rejects included as items cataloged

2.1.2 Inputting Records into the OCLC Data Base

For the purposes of this study, inputting was divided into two categories - input of original cataloging and input of routine cataloging. Original cataloging input denotes those records supplied in most part by the efforts of catalogers within the library. Routine cataloging input, on the other hand, is considered to be records supplied in most part by LC copy or cataloging sources outside the library. Both of these are distinguished in the OCLC data base from LC-supplied MARC records by the listing of the cataloging library in the cataloging source field.

As shown earlier in Tables 2-3 and 2-4, inputting has remained relatively stable in percentage of total time and items utilized at 16 and 6 percent respectively. As

indicated in Table 2-10, average times for inputting original cataloging data have generally declined from the first two period averages of 13.3 and 13.9 minutes to 9.6 minutes. Somewhat less clearly, routine cataloging times also exhibit a downward trend. Overall average inputting time is nearly the same for both types - about 11.5 minutes.

Table 2-10. Average time per input record -- original and routine cataloging

Sample Days	Average time per input record		
	Original cataloging	Routine cataloging	Combined
1-5	13.3	12.1	12.8 minutes
6-10	13.9	13.6	13.8
11-15	11.7	10.5	11.1
16-20	10.2	10.2	10.2
20-25	9.6	12.2	10.5
1-25	11.5	11.6	11.5 minutes

2.1.3 Record Updates

For purposes of this study, record update is defined as inputting of additional information to a record already in the OCLC data base. This includes the use of records for production of additional cards, revisions, or the notification of additional copies. This notably differs from the OCLC definition of record update which excludes any card production (see Glossary). For this reason, apparent confusion in reporting may have diminished the validity of these particular results. Reported record updating accounts for four percent of terminal time utilized and nine percent of searches made of the data base. As Table 2-11 indicates, the average time for record updating is 2.2 minutes with a range of 1.6 to 3.6 minutes.

Table 2-11. Average terminal time per record searched for other types of use

Sample Days	Average terminal time per record searched for other uses		
	Record updates	Order department	ILL searches
1-5	3.2 minutes	1.8 minutes	2.4 minutes
6-10	2.9	2.2	2.5
11-15	3.6	2.1	2.8
16-20	1.6	1.6	1.5
20-25	1.7	1.9	3.2
1-25	2.2 minutes	1.9 minutes	2.4 minutes

2.1.4 Order Department Use

OCLC has been employed as a tool in ordering procedures. This has been primarily in bibliographic searching routines and, more recently, as a pre-cataloging procedure. So far, use of OCLC as a decision-making tool on whether to order has been limited. In post-order routines the library may produce cards prior to catalog department processing, allowing the title to be essentially cataloged prior to entrance into the catalog department.

Eight percent of terminal time used and eighteen percent of volume thruput can be attributed to order departments. The average searching time has remained relatively stable at about two minutes despite added pre-cataloging responsibilities, such as searching copy, that many order departments have assumed. Table 2-11 records these averages.

2.1.5 Interlibrary Loan Use

Several interlibrary loan divisions have utilized OCLC as a bibliographic and location tool. This accounts for one percent of all terminal time utilized and two percent of volume thruput. Average times for searching have fluctuated around 2.4 minutes as shown in Table 2-11. There is no evidence of a declining search rate, but data has been quite limited.

2.1.6 Utilization of Terminal Time

Utilized terminal time per day averages 391 minutes, or about 6 1/2 hours, with small fluctuations observed over the sample period (Table 2-12). On an individual library basis, terminal utilization varies greatly, with some libraries reporting no activity at all on a sample day.

Down time averaged 25 minutes per terminal per day, again with great variances. Three hundred ninety-four minutes of down time per terminal were reported on May 8, when an undetected bad port, or entry point, to the OCLC mini-computer affected the Texas and New Mexico tie-in. Though easily corrected, this unique circumstance was for a time undiagnosed, causing about 23 hours of terminal down time. Though down time or malfunctions in the system, module or telephone lines present serious inconveniences, current average levels of terminal utilization suggest that down time is not yet a significant problem.

Table 2-12. Utilization of available terminal time

Sample Days	Time available per terminal daily	Average time used daily	Average down time daily	Average available unused time daily
1-5	780 min.	399 min.	27 min.	354 min.
6-10	780	364	16	400
11-15	780	408	11	481
16-20	900	419	9	472
21-25	900	359	66	435
1-25	828 min.	391 min.	25 min.	412 min.

In considering terminal utilization, it should be noted that libraries tend, at least initially, to staff the terminal during normal working hours only. Based on an eight-hour day, this means that only 480 minutes per day are viewed as usable time. The difference between this figure and the average time used plus average down time daily is approximately one hour.

2.2 Data Base Results

To gather information about lengths of processing time and scope of the OCLC data base relative to subject, date of publication, and language, a sample of the materials processed through the catalog department was identified. The sample consisted of every tenth (twentieth in large institutions) item received during one-week periods in November, January, and March. For analysis purposes, every second form was evaluated. Data for those institutions sampling every twentieth item were weighted by a factor of two. In this section, results given by library size for academic libraries refer to the following classification:

Small
Austin College
Bishop College
Dallas Baptist College
Texas Woman's University
University of Dallas
The University of Texas at Dallas
Eastern New Mexico University

Medium
Baylor University
East Texas State University
Southern Methodist University
Texas Christian University
The University of Texas at Arlington

Large

North Texas State University
Texas Tech University
The University of Texas at Austin
New Mexico State University
University of New Mexico

These designations were made based on 1973-74 monographic and serial cataloging volume. Hence, they do not necessarily reflect present cataloging thruput. For further discussion of these categories see Section 3.1.

2.2.1 Scope of Data Base

Table 2-13 summarizes the find ratios by sample week and library type for sampled OCLC-searched items. As is indicated, the find ratio is somewhat lower for the sample than that indicated for cataloging searches in Table 2-7. This can be attributed to the volume of unknown outcomes observed during the second sample week. Perhaps a more appropriate index of OCLC searching is the low percent of unsuccessful searches reported, averaging seven percent. In results by library type it is interesting to note the comparably high find ratio of the medium sized libraries.

Table 2-14 presents the same data by subject and date of publication. The majority of sampled items were from the humanities and social sciences. Subject variation does not affect results to any discernible degree, with find ratios ranging from 64 to 71 percent for specified subject areas. The general category of "Other" has the lowest find ratio, perhaps due to the number of unknown search outcomes. Date of publication does have a distinct effect upon searching success, with the ratio higher for more recent publications. This is particularly important in view of the large volume of post-1973 searches.

Table 2-13. OCLC find ratios by sample week and type of library

	Items searched from OCLC records			
	Number of sample items	Percent found	Percent not found	Unreported
Sample week				
1	377 items	77%	9%	14%
2	237	47	7	46
3	110	76	3	21
Library type				
Academic				
Small	215 items	61%	9%	30%
Medium	277	85	4	11
Large	187	53	7	40
Public	45	49	18	33
Total	724 items	67%	7%	26%

Table 2-14. OCLC find ratios by subject and date of publication

	Number of sample items	Percent found	Percent not found	Unreported
Subject				
Humanities	269 items	64%	9%	27%
Social Sciences	243	71	7	22
Science and Technology	117	67	9	24
Other	40	52	8	40
Unreported	55	71	2	27
Date of Publication				
Prior to 1963	73 items	52%	15%	33%
1963 - 1967	69	61	20	19
1968 - 1972	183	67	4	29
After 1972	378	71	4	25
Unreported	22	54	36	10
Total	724 items	67%	7%	26%

2.2.2 Processing Times

OCLC processing times for the same sample were collected. An evaluation of the elapsed time from book receipt to completed cards becomes very complicated when combining data from libraries whose processes and policies are so diverse. This diversity suggests that examination of OCLC processing time should be segmented into two periods. The time prior to checking the item against the OCLC data base is a factor of the individual library's processes. The second period, from card production to card receipt is largely beyond the control of the library. Hence, the following tables present the two intervals separately. It should be noted that days counted were those of normal working week, i.e., Monday through Friday. Therefore, intervals presented represent one week apiece.

Table 2-15 examines the initial interval, from item receipt to terminal. Remarkably, 37 percent of the sampled items were checked against OCLC records within four working days of receipt.

Table 2-16 presents the percentage distribution noted for the second period, from card production to card receipt. Cards for 55 percent of the sampled OCLC items were received by the end of the third week after production. Time data was not reported for one-third the items considered.

Table 2-15. Time period from item receipt to OCLC terminal

Number of days to terminal	Percent of sampled items checked on terminal			
	Week 1 (377 items)	Week 2 (237 items)	Week 3 (110 items)	Total (724 items)
0-4	48%	20%	33%	37%
5-9	11	7	17	10
10-14	6	9	17	8
15-19	4	5	14	6
19+	14	8	4	10
Unreported	17	51	15	29
Total	100%	100%	100%	100%

Table 2-16. Time period from card production at the terminal to card receipt

Number of days from terminal to card receipt	Percent of sampled items for which cards were received			
	Week 1 (377 items)	Week 2 (237 items)	Week 3 (110 items)	Total (724 items)
0-4	*	0%	1%	1%
5-9	43	9	25	21
10-14	38	25	31	33
15-19	10	8	6	9
19+	4	0	5	3
Unreported	5	58	32	33
Total	100%	100%	100%	100%

*less than 1 percent

2.3 Order Department Searching Costs and Evaluation

For many libraries, order searching is not the responsibility of acquisition or ordering departments. Many order departments depend upon standing orders or requests already searched by the requesting subject or branch libraries. Practices vary greatly. Requests may be searched either before or after ordering, and sometimes both. Order searching may be extensive, checking several available sources for information. Such searches may be used as a pre-cataloging bibliographic search as well. Routines may be abbreviated to searching only card catalogs and order request files preventing duplication in the collection. Findings presented here are averages from the entire range of practices.

2.3.1 Searching Costs and Times

Time data on pre- and post-order searching (Form 9) along with monthly statistics (Form 10) were received from 11 of the participating institutions. Table 2-17 presents the results derived from combination of this information. The decline in order searching volume is accounted for by the varying configuration of reporting institutions. Searching time per item has been fairly stable around 12 minutes per search, costing about 68 cents. The slight decrease of one minute per search over the seven month data collection cannot be directly attributed to OCLC. Recalling Table 2-11, OCLC order searching averages 1.9 minutes per item. However, searches made by bibliographic clerks are often rechecked, requiring additional terminal time. In addition, other searches (such as those for pricing and vendor information) and processes are included in the total staff time required per search.

Table 2-17. Order search activity costs

	Sample period			
	November	Dec. - Feb.	March - May	Overall
Number of libraries reporting	12	11	10	11
Average no. of order requests searched per library per month	1,157	1,098	1,057	1,094
Average time spent per order request by order department staff (OCLC and manual operations)	12.6 min.	12.5 min.	11.3 min.	12.1 min.
Average staff cost per request (OCLC and manual operations)	$.65	$.68	$.69	$.68

2.3.2 Searching Evaluation

In order to evaluate searches conducted by order departments, tally sheets (Form 8) were kept during the same periods and for the same sampling intervals as Form 2 (see Section 2.2). Data was collected on monographic searches only. Search outcomes by bibliographic source, subject, publication date and language of the requested item were all elements of collection.

As is immediately noticible from Table 2-18, OCLC searching volume is nearly as great as NUC and publisher's list searching volume. Also, the find ratio is comparably good. As has been mentioned, departments often search several bibliographic tools for the same request before gathering sufficient information for ordering. In the sample, a total of 3,255 searches were conducted for 1,551 order requests.

OCLC has been able to provide Texas and New Mexico locations which could affect ordering patterns for OCLC participants. However, only eight items which were not found in the libraries' own catalogs but were found in the OCLC data base were subsequently not ordered. It is clear then, that OCLC has influenced ordering decisions only marginally.

Table 2-19 presents the subject and publication ranges for successful order searches. It is interesting to note that OCLC has the highest volume of successful searches for scientific and technical publications - having 57 successful searches, 30 percent of OCLC successful searches. By publication dates the highest percentage of OCLC successful searches are for post-1973 publications. On the other hand, the National Union Catalog appears the most useful for searching pre-1973 publications.

Table 2-18. Find ratio for order searching

Type of Library	Source: Public Catalog		National Union Catalog		Publisher's Lists		OCLC		Other	
	Number of searches	Find ratio	Number of searches	Find ratio	Number of searches	Find ratio	Number of searches	Find ratio	Number of searches	Find ratio
Academic										
Large	317	20%	122	72%	90	81%	70	63%	358	20%
Medium	458	35	156	79	145	70	140	78	271	46
Small	60	3	16	31	36	64	61	66	66	0
Public	350	15	0	0	8	62	0	0	315	3
All Libraries	1,385	25%	294	73%	279	69%	271	71%	695	30%

Table 2-19. Successful order searches by subject and publication date

	Number of Successful searches									
	Public Catalog		National Union Catalog		Publishers' List		OCLC		Other	
	Number of successful Searches	% of total	Number of successful searches	% of total	Number of successful searches	% of total	Number of successful searches	% of total	Number of successful searches	% of total
Subject										
Humanities	144	51%	104	48%	70	37%	76	39%	91	40%
Social Sciences	72	26	87	40	73	38	54	28	78	34
Science & technology	36	13	16	7	31	16	57	30	41	18
Other	25	9	9	5	14	7	5	3	10	5
Unknown	3	1	0	0	4	2	1	*	7	3
Date										
before 1963	76	27%	47	22%	9	5%	9	5%	10	4%
1963-1967	33	12	36	17	10	5	6	3	15	7
1968-1972	59	21	74	34	58	30	53	27	73	32
1973-1975	105	38	51	23	106	55	119	62	122	54
Unknown	7	2	8	4	9	5	6	3	7	3
Total	250	100%	216	100%	192	100%	193	100%	227	100%

*less than 1%

2.4 Interlibrary Loan Searching Costs and Evaluation

Reports on interlibrary loan searching activities (Form 6) and monthly ILL statistics (Form 7) were received from 15 of the participating libraries. Analysis of these, by month, indicates a somewhat sporadic pattern of requests over the seven month study period, an effect generally observed in ILL requests. Average monthly ILL volume per reporting library (Table 2-20) did increase somewhat over the three periods considered (November, December-February, and March-May). During these same periods, average staff time spent per monograph request increased slightly from 20 to 23 minutes, while average cost was about $1.50. If OCLC has had an observable effect on ILL operations, it should be evidenced in increased find and fill rates for requests processed.

A tally sheet (Form 8) was used to record all ILL searches conducted during three two-week intervals in November, January, and March. Data included subject, language and date of publication requested, bibliographic sources searched, location to which request was sent, and time between request and response receipt. Table 2-21 summarizes this data.

The find ratios for OCLC are somewhat below that for the TNR and NUC. However, it should be noted that many libraries use OCLC for ILL only as a last resort. Thus, the find ratio is expected to be lower than that of other resources. The higher number of searches for OCLC in the first sample week was caused by the inclusion of two more reporting institutions in this sample.

Table 2-20. Interlibrary loan activity costs (monographs only)

	Sample Period			
	November	December-February	March-May	Overall
Number of libraries reporting	15	13	13	15
Average number of monograph requests made per library per month	124	145	179	161
Average time spent per request by ILL staff (OCLC and manual operations)	19.7 min.	20.7 min.	22.8 min.	21.4 min.
Average staff cost per request (OCLC and manual operations)	$1.49	$1.45	$1.59	$1.52

Table 2-21. Find ratios for ILL searching

	Sources searched							
	Texas Numeric Register		National Union Catalog		OCLC		Other	
	Number of searches	Find ratio	Number of searches	Find ratio	Number of searches	Find ratio	Number of searches	Find ratio
Sample period								
1	383	43%	250	65%	288	38%	566	28%
2	112	58	72	61	132	51	306	47
3	338	57	107	70	147	42	736	31
Library type								
Academic								
Large	132	35%	215	79%	192	4[illegible]%	395	55%
Medium	92	74	84	71	81	38	118	73
Small	54	51	60	43	112	62	92	54
Public	555	51	70	39	182	27	1003	17
Total	833	51%	429	66%	567	42%	1608	33%

Examination of successful searches by subject and date of publication, as indicated in Table 2-22, shows a higher volume of successful searches for post-1973 in the OCLC data base than that of other sources. By subject, OCLC searching exhibits the same pattern as other sources -- that is, a high percentage of materials in the humanities and social sciences. This pattern, of course, is a reflection of the types of materials requested.

Table 2-23 presents the outcome of requests made of libraries within the state, within SWLA, and within and outside the United States. Also included is the length of time between issuing the request and receipt of a response. It should be noted that a great many of these requests represent second and third attempts to locate requested materials. Hence, totals represent the number of times items are requested rather than the number of requests. Thus, 1,393 requests are represented by the 2,217 total presented in Table 2-23. The designations of "location source citation" and "no location source citation" refer to the outcome of location searching, i.e., items that were not found in any bibliogrpahic source are classed under the latter category.

Obvious from Table 2-23 are the great number of requests that have been found in some bibliographical source. For those not found in a bibliographic source, the likelihood of the request not being filled is nearly equal that of being filled. These requests (i.e., without location citations) are usually made based on the intuitive knowledge of others' collections. Also evidenced by Table 2-23 is the higher fill ratio for requests made within the state (Texas or New Mexico). Too, response to these within state requests is far more immediate than that to requests made elsewhere. Forty-six percent of the requests made within the state are answered in some manner within five days. Less than 10 percent are answered from outside the state within the same interval.

Table 2-22. ILL Search Find Rates by Subject and Date

	Number of successful searches							
	Texas Numeric Register		National Union Catalog		OCLC		Other	
Subject	Number of successful searches	Percent of total	Number of successful searches	Percent of total	Number of successful searches	Percent of total	Number of successful searches	Percent of total
Humanities	218	52%	136	45%	90	37%	186	35%
Social Sciences	121	29	107	35	91	38	225	43
Science and Technology	60	14	48	16	45	19	104	20
Other	11	2	6	2	14	6	10	2
Unreported	12	3	7	2	0	0	0	0
Date								
Before 1963	179	42%	181	60%	53	22%	211	40%
1963 - 1967	91	22	42	14	35	15	55	10
1968 - 1972	134	32	77	21	63	26	146	28
1973 - 1975	18	4	4	1	72	30	46	9
Unreported	0	0	0	0	17	7	67	13
Total	422	100%	304	100%	240	100%	525	100%

Table 2-23. ILL requests made by location and time to response

	Request made to library											
	Within state		Within SWLA**		Within U.S.		Outside U.S.		Unknown		All requests	
	Requests	Percent of total	Requests	Percent of total	Requests	Percent of total	Requests	Percent of total	Requests	Percent of total	Requests	Percent of total
Filled requests												
Location source citation	780	61%	73	45%	180	44%	18	17%	33	13%	1084	49%
No location source citation	134	10	20	12	110	27	18	17	0	0	292	13
Unfilled requests												
Location source citation	206	16	24	15	89	22	28	26	8	3	355	16
No location source citation	105	8	15	9	31	7	19	17	159	63	329	15
Unreported	58	5	31	19	0	0	25	23	53	21	167	7
Days to response												
0-5	591	46%	15	9%	19	5%	4	4%	140	55%	769	35%
6-10	271	21	34	21	72	17	20	18	44	17	441	20
11-15	179	14	19	12	62	15	32	30	8	3	300	14
16-20	82	7	23	14	62	15	19	18	1	1	187	8
More than 20	79	6	30	18	63	17	24	22	8	3	209	9
Unreported	81	6	42	26	127	31	9	8	52	21	311	14
Total	1283	100%	163	100%	410	100%	108	100%	253	100%	2217	100%

*Refers to the states of Arizona, Louisiana, New Mexico, Oklahoma, and Texas.

Two consequences of OCLC upon interlibrary loans were commented upon in particular by participating librarians. Requests for materials owned by libraries participating in this study increased due to OCLC membership, including some materials still in processing departments when requested. Citing OCLC has eliminated the verification routines which the lender must often perform to ascertain ownership. Secondly, by providing citations of small academic and public library holdings, OCLC participation has allowed for a more equitable distribution of requests, in contrast with the traditional reliance upon large research libraries.

3. COMPARISON OF CATALOGING COSTS

A primary objective of this study as stated in the original request for proposal was the comparison of the economic aspects of cataloging and card production on the OCLC system with those for manual operations. To this end, study plans included special data collection from libraries operating parallel manual and OCLC systems and, from all libraries, collection of 1973-74 and 1974-75 budget and volume data.

The usefulness of gross cost comparisons over the last two years are severely restricted by a number of factors. Among these are inconsistencies in data reporting, the uncertainty of using budget allocations rather than actual expenditures, and the difficulties caused by differing start-up dates for OCLC operations in the individual libraries. Above all, changes in the volume and type of materials to be processed from the first year to the second can be expected to cause variations in overall cost figures as significant as those caused by OCLC use. Also, the data is such that the individual influences on costs cannot be isolated. For these reasons, the operation of controlled parallel systems was key to the evaluation study.

Only one parallel operation was conducted, at Dallas Public Library. For this purpose, items were sorted during sampling intervals according to subject and level of cataloging difficulty, with one-third going to OCLC processing and two-thirds going to manual processing. Each group remained separate throughout processing, and data was recorded separately for the two groups. Detailed results for this system are presented in Chapter 7, but are summarized below.

Table 3-1. Dallas Public Library Unit Costs

	Manual processing	OCLC processing
per title unit cost	$7.68	$5.42
per volume unit cost	$ .92	$1.41

These figures include only selected activity labor costs, card costs and hit charges.

It should be noted that Dallas Public has a fairly high ratio of volumes to titles processed, and that this ratio is significantly different for items processed manually and through OCLC. For manual processing, the study data shows 8.7 volumes per title, while only 3.8 volumes per title is seen for items processed in the OCLC system. This means that per title unit costs show the comparative cost of processing 8.7 and 3.8 volumes, and it is not surprising that manual costs are greater. On a per volume basis, manual processing costs were $ .92 and OCLC costs were $1.41.

Unfortunately no other parallel operations were conducted. For some indication of comparative costs, then, budget and volume data for the past two years were considered. Data sources were the following:

1. 1973-74 total cataloging volume - These figures were taken from the background forms (see Attachment A) completed by the participating libraries in the early stages of the study period. Total volumes processed (monographs, serials, and other) for July 1973 through June 1974 were used. Many libraries did not provide statistics for "other" volumes processed.

2. 1974-75 total cataloging volume - The libraries completed monthly cataloging statistics forms (see Attachment A, Form 4) for the period November 1974 through May 1975. These included figures on total volumes processed, including monographs, serials, and other. Again many libraries did not provide statistics for "other" volumes processed. To obtain annual volume figures, the seven months of data available were extrapolated to twelve month figures.

As mentioned previously, the volume and character of cataloged materials changed significantly between the two years in some libraries. Of particular note among the libraries considered in this chapter was a substantial decrease in serial processing at The University of Texas at Arlington and a seventy percent increase in total cataloging volume at Eastern New Mexico University.

Continuing with the sources of data utilized, we now consider:

3. 1973-74 total cataloging budget - Budget figures were taken from the background forms (see Attachment A), which asked for the total cataloging department budget for the

current and last year. Also requested were nine specific categories of cost; including professional salaries, non-professional salaries, student assistants' wages, catalog and stock, bibliographical tools, fees for automated cataloging systems other than OCLC, equipment costs for these systems, other supplies and equipment, and other major costs. Some libraries provided the total figure, while others had available some subcategory costs. Only those libraries providing total costs or wages plus some additional costs were considered in analysis, and cost figures not provided are noted.

4. 1974-75 total cataloging budget - This was obtained from the background form, using the same methodology as for 1973-74 costs. It should be noted that these were budget allocations as opposed to expenditures and possibly somewhat unreliable.

Budget figures obtained were for the cataloging departments, and did not generally include costs borne outside the department. It appears that OCLC costs were not included, and so figures for OCLC hit and card charges were computed and added to total expenditures for 1974-75. These figures were interpolated from 11 months of data provided by OCLC. While these charges are based on cataloging activities directly, it should be noted that ILL and order departments also benefit - without hit or card charges - from the availability of the OCLC System. Thus their costs are, in a sense, borne in part by the cataloging department.

The volume and budget figures assembled are shown in Table 3-2. Libraries not listed were missing one or more data elements, so that no comparison could be made. Unit costs for the two years compared were computed and are shown. It should be recalled that unit costs are for volumes processed, encompassing a wide variety of levels and types of processing.

Table 3-2. Comparative cataloging deparment data for selected libraries

Library type and name	1973-1974			1974-1975			Unit cost difference
	Volume processed[1]	Cataloging budget[2]	Unit cost	Volume processed[1]	Cataloging budget[2]	Unit cost	
Public							
Dallas Public	143,521	$201,071[4]	$1.40	163,190	$ 229,970[4]	$1.41	$+ .01
Fort Worth Public	45,480	152,008	3.34	55,140	154,533	2.80	- .54
Texas State Library	5,644	29,161	5.17	8,088	41,683	5.15	- .02
Academic, Small							
Eastern New Mexico U.	7,907	47,175[5]	5.97	13,464	61,943[5]	4.60	-1.37
Academic, Medium							
Baylor University	27,314	72,632[3]	2.66	28,745	97,408[3]	3.39	+ .73
East Texas State U.	19,497	110,000	5.64	21,338	120,956	5.67	+ .03
Texas Christian U.	20,296	82,760	4.08	19,836	91,778	4.62	+ .54
University of Texas at Arlington	21,732	107,626[3]	4.95	19,512	122,247[3]	6.27	+1.32
Academic, Large							
Texas Tech U.	34,987[7]	173,124[3]	4.95	28,206[7]	173,096[3]	6.14	+1.19
New Mexico State U.	34,138	164,964[6]	4.83	42,012	192,616	4.58	- .25

[1] Includes monographic, serial and other material. 1973-74 data was based on background reports. 1974-75 data was extrapolated from seven months of reported information.

[2] Except where noted, total cataloging budget reported on background form. 1974-75 figures were supplemented with OCLC hit and card charges.

[3] Cataloging budget includes OCLC hit and card charges (for 1974-75), staff salaries, card-stock, bibliographic tools, automated system fees and equipment (exclusive of OCLC), other supplies and equipment, and other major expenditures. Other minor expenditures are excluded.

[4] Cataloging budget includes OCLC hit and card charges (for 1974-75), staff salaries, card-stock, and other major expenditures.

[5] Cataloging budget includes OCLC hit and card charges (for 1974-75), staff salaries, card-stock, automated system fees and equipment (exclusive of OCLC) and other supply and equipment costs.

[6] Cataloging budget includes OCLC hit and card charges (for 1974-75), card-stock, bibliographic tools, and automated system fees and equipment (exclusive of OCLC).

[7] Volume figures do not include microcards and microfilm processed.

The unit costs shown range from $1.40 to $5.97 per volume processed for the 1973-74 year, during which processing was primarily manual. The comparable range in 1974-75, when OCLC operations were in effect in the libraries, was $1.41 to $6.27 per volume. The cost differential ranged from $1.37 less in the second year to $1.32 more, with an average differential of $.16 more for 1974-75 processing. This amounts to a four percent increase over 1973-74 unit costs.

Considering individual libraries, we note a number of interesting factors. The largest decrease in unit cost is that of Eastern New Mexico University, where the volume of processing increased 70 percent in the second year. The largest increase is that of the University of Texas at Arlington, where serial processing decreased and monographic processing increased over the period considered. The effects of these sorts of situations, magnified for these two libraries, are presumably also a part of the results observed for other libraries.

The results of these calculations for the Dallas Public Library show an average unit cost of $1.40 per volume in 1973-74 and $1.41 per volume in 1974-75. Included in this figure are cataloging salaries, catalog and stock, equipment rental and furniture and fixtures, and OCLC hit and card charges. It is of interest to compare these figures with those of Table 3-1, which show unit costs per volume of $.92 for manual processing and $1.41 for OCLC processing, based on selected activity costs and hit and card costs. The $.92 figure for manual processing, compared with the figure of $1.40 for 1973-74, when processing was primarily manual, suggests that 34 percent of the total costs are not accounted for in the selected activity costs.

To identify 1974-75 costs based on selected activities at Dallas Public, we must combine manual and OCLC processing costs in the appropriate proportion.

Data shows that about 87 percent of the volumes processed at Dallas went through the manual system (this includes serials and other materials as well as monographs). Based on this, the 1974-75 unit cost figure is $.98, to be compared with the total unit cost figure of $1.41. This manipulation seems to confirm the consistency of the two sets of calculations, with selected costs going from $.92 to $.98 and total costs going from $1.40 to $1.41 over the two years. The differences in percentage increases between selected and total costs can be attributed in part to costs not included in the selected activity costs which decreased over the two year period, and also to the lesser degree of accuracy entailed in making gross comparisons over the two years.

PART II
ACADEMIC LIBRARIES

The seventeen academic library participants were stratified into three groups -- large, medium and small -- according to 1973-74 monographic and serial thruput (as indicated in background forms). Such groupings are inadequate due to changes in volume thruput observed between 1973-74 and 1974-75 and the substantial volume of other types of materials (microfilm, audio-visual materials, etc.) processed in some libraries. Despite these limitations, some interesting findings were derived for these classes in Chapter 4, All Academic Libraries.

Though terminal utilization varies significantly throughout the academic libraries, size or volume thruput appears a major factor. The large academic libraries (each of which have two terminals) used each terminal about 7.7 hours per day, while medium and small libraries used the terminal 6.7 and 5.6 hours per day respectively.

The small libraries have a notably more diverse pattern of terminal use than do other sized libraries. Routine cataloging from OCLC records accounts for only 51 percent of utilized terminal time, while these figures are 65 percent and 70 percent for medium and large libraries, respectively.

Revision rates were highest in the medium libraries -- 42 percent as opposed to 36 percent in the large and 34 percent in the small libraries. Similarly the time per record produced was slightly higher in the medium library (7.4 minutes as opposed to 7.2 minutes in small libraries and 6.7 minutes in large libraries).

Trends observed in monographic processing were noted over the study. Routine cataloging with cards or card copy dropped significantly -- 59 percent in small, 15 percent in medium and 58 percent in large libraries. Original cataloging

volume decreased only in medium libraries -- a 32 percent drop. In large libraries, original cataloging increased by about eight percent. Over the study, small library total monographic thruput decreased by about 13 percent; medium increased by 13 percent; and large increased by 24 percent.

Average costs reflect some of these patterns. Costs for routine cataloging from cards in both small and large libraries decreased by more than 40 percent, while remaining stable in medium libraries. Original cataloging costs decreased in small libraries by 33 percent, while medium and large library costs increased significantly. Staff time devoted to card production decreased by 73 percent in small libraries and 44 percent in large libraries, but remained relatively stable in medium libraries.

Chapter 5 examines New Mexico libraries separately. Routine cataloging with OCLC records accounted for 78 percent of all observed terminal use -- higher than that noted for all academic libraries. The five OCLC terminals in New Mexico were in use on the average 7.7 hours per day. Acceptance and revision rates were equal at 37 percent of all records used. The decrease in the average time (including hold time) per item cataloged -- from 8.6 minutes to 6.1 minutes -- is of note.

Original monographic cataloging, on a monthly basis, has increased by over 100 percent while routine cataloging with cards or card copy has decreased by 66 percent. This is evidenced in monthly time and staff cost expenditures. Routine cataloging has decreased by about 60 percent of its initially observed time and staff cost. Original cataloging, on the other hand, increased by about 45 percent of both time and cost expenditures.

Further information related to the academic libraries participating in this study can be found in Chapter 3, Comparison of Cataloging Costs, and Appendix D, Summary of Site Visits.

4. ALL ACADEMIC LIBRARIES

4.1 Introduction

Seventeen of the twenty-two institutions participating in the evaluation study were academic libraries. As shown by their profiles, the academic libraries range in size from 70,000 to over a million volumes. For this reason, more accurate estimation of OCLC performance may be discerned by analyzing data appropriate to these varying sizes. Stratification of the academic libraries was possible by either of two methods. The usual method would be by collection size. However, for the purposes of this study it was considered more relevant to segment by cataloging volume thruput, and more specifically, by monographic and serial thruput. Hence, the configuration appearing in Table 3-1 indicates the stratification of academic libraries according to annual monographic and serial volume thruput for 1973-1974. It should be emphasized that this does not reflect current year statistics which might yield a different grouping.

4.2 OCLC Terminal Use

Appendix C, Table C-3 summarizes data taken from the library terminal log sheets of the three groups of libraries for the sample days. Results for the sample "weeks" for all academic libraries are given in Table C-4. Discussion of these results by type of use follows.

In observing the differences between terminal use in the three groups of libraries, it is necessary to keep in mind the number of terminals per library. As indicated in Table 4-1, two small and two medium libraries had two

Table 4-1. Stratification of academic libraries by cataloging volume thruput (monographs and serials only)

Annual Cataloging Volume	Library Name	Terminals
Small (less than 15,000 volumes processed annually)	Austin College	1
	Bishop College	1
	Dallas Baptist College	1
	Texas Woman's University	2
	University of Dallas	1
	The University of Texas at Dallas	2
	Eastern New Mexico University	1
Middle (between 15,000 and 30,000 volumes processed annually)	Baylor University	1
	East Texas State University	2
	Southern Methodist University	2
	Texas Christian University	1
	The Univ. of Texas at Arlington	1
Large (more than 30,000 volumes processed annually)	North Texas State University	2
	Texas Tech University	2
	The Univ. of Texas at Austin	2
	New Mexico State University	2
	University of New Mexico	2

terminals apiece, as did each of the large libraries. In these libraries, items available for processing per terminal would be half the total available. All tables in this section present data on a per terminal, rather than per library basis.

Tables 4-2 and 4-3 show daily per terminal averages for time at terminal and volume processed. Both show increases in terminal utilization from the small to medium to large libraries, with an overall difference of 128 minutes and 26

Table 4-2. Average daily volume processed at terminal by type of use - academic libraries

Type of Use	Small libraries		Medium libraries		Large libraries		Total	
	Average daily volume processed	Percent of volume processed	Average daily volume processed	Percent of volume processed	Average daily volume processed	Percent of volume processed	Average daily volume processed	Percent of volume processed
Cataloging from OCLC records	38 items	47%	55 items	59%	84 items	79%	62 items	65%
Input-original cataloging	2	2	2	2	6	6	4	4
Input-routine cataloging	3	4	2	2	2	2	2	3
Record updates	25	31	1	1	2	2	9	9
Order department use	13	16	33	35	11	11	18	19
ILL department use	*	*	1	1	2	2	1	1
Total	81 items	100%	94 items	100%	107 items	100%	95 items	100%

*less than 1

Table 4-3. Average daily time at terminal by type of use - academic libraries

Type of Use	Small libraries		Medium libraries		Large libraries		Total	
	Average daily time at terminal	Percent of total time at terminal	Average daily time at terminal	Percent of total time at terminal	Average daily time at terminal	Percent of total time at terminal	Average daily time at terminal	Percent of total time at terminal
Cataloging from OCLC records	172 min.	51%	261 min.	65%	325 min.	70%	259 min.	64%
Input-original cataloging	28	8	27	6	58	13	40	10
Input-routine cataloging	45	13	24	6	18	4	28	7
Record updates	45	13	8	2	8	2	20	5
Order department use	26	8	66	17	19	4	34	8
ILL department use	3	1	2	*	4	1	3	1
Other	16	5	11	3	31	7	21	5
Total	336 min.	100%	399 min.	100%	464 min.	100%	406 min.	100%

*less than 1

items between small and large. On both an absolute and a percentage basis, more time is spent on terminals in large libraries in cataloging from OCLC records than in the smaller libraries. Small libraries devote almost half of their terminal time to other activities, including substantial amounts to input of routine cataloging records and record updating. Middle-sized libraries' terminals have more order department activity than the other two groups. Volume processed and time spent on the terminal are, of course, primarily dependent on the volume of materials available for processing.

Comparing the data presented with that of public libraries (see Tables 6-1 and 6-2 in Chapter 6), we find that academic library terminal use is considerably greater and more diverse. Academic libraries on the average spend 50 percent more time at the terminal and process 80 percent more items. Eighty-five percent of terminal time in public libraries is utilized for cataloging from OCLC records, as compared with 64 percent in academic libraries.

4.2.1 Routine Cataloging Using OCLC Records

As indicated by Tables 4-2 and 4-3, 64 percent of all time utilized and 65 percent of all volume thruput at the terminal in participating academic libraries is devoted to routine cataloging using OCLC records. Table 4-4 shows more explicitly what these percentages represent in terms of time and volume. It should be noted that figures given in this table and others following on specific activities are daily averages over only terminals actually in use. If terminals not in use are also considered, overall averages are reduced to 260 minutes and 62 items daily. Table 4-4 suggests a fairly steady pattern of routine cataloging for the academic libraries, with no apparent trends. As noted previously, volume thruput is largest for large libraries,

with more than twice the number of items processed per terminal on the average than in small libraries. This difference in volume is emphasized further by the fact that all of the large libraries have two terminals, so that their average thruput per library is actually twice the figure reported by terminal.

Table 4-5 presents "find" ratios for routine cataloging from OCLC records. Three variations of the "find" ratio are illustrated in this table. The simple "find" ratio is derived directly from raw data without consideration of either records rejected or held. If only utilized or "useful" records are to be considered finds, then some adjustment is necessary for rejected records. Rejection, though, does not necessarily indicate a faulty or unuseful record. Hence, these records have been eliminated from both search (denominator) and find (numerator) totals. This corrected "find" ratio is shown in column two of Table 4-5. Further refinement is necessitated by the practice of holding or "saving" records. If holds may be characterized as items retrieved by OCLC number or from save files rather than by normal search routines then they inflate the "find" ratio significantly, since they are items which have already been searched and are known to be present. Thus the third column of Table 4-5 presents the adjusted "find" ratio found after subtracting holds from both search and find totals. As noted for results from all libraries, fluctuations over the sample periods seem unpatterned. The overall averages for academic libraries are a 72 percent simple "find" and corrected "find" ratio and a 68 percent adjusted "find" ratio. Considering these ratios for the three classes of academic libraries, we find all three ratios lowest in the large libraries, and somewhat higher in the medium libraries than in the small. The former observation may be attributed in part to the processing of special collections in larger libraries.

Table 4-4. Average daily time at terminal and volume processed in cataloging from OCLC records -- academic libraries

Sample days	Average time spent at terminal daily				Average volume processed from OCLC records daily			
	Small libraries	Medium libraries	Large libraries	All libraries	Small libraries	Medium libraries	Large libraries	All libraries
1-5	219 min.	289 min.	289 min.	297 min.	50 items	65 items	83 items	68 items
6-10	182	238	331	259	40	53	94	66
11-15	164	268	361	266	35	55	82	58
16-20	170	250	355	266	41	53	91	64
21-25	165	274	310	255	32	49	94	63
1-25	178 min.	264 min.	342 min.	269 min.	39 items	56 items	89 items	64 items

Table 4-5. "Find" ratios for routine cataloging using OCLC records by sample days and library size -- academic libraries

	Simple "find" ratio	Corrected "find" ratio*	Adjusted "find" ratio**
Sample days			
1-5	74%	73%	69%
6-10	69	68	64
11-15	75	74	71
16-20	75	74	71
21-25	69	69	65
Library Size			
Small	74%	73%	70%
Medium	78	78	74
Large	69	68	65
Total	72%	72%	68%

*eliminating rejected records from both numerator and denominator

**eliminating rejects and records recalled from save or retrieved by OCLC number from both numerator and denominator

Disposition of records found in the OCLC data base is shown in Table 4-6. A fairly large percentage of records are accepted without revision and a slightly smaller percentage are revised in some way. About 16 percent of records found are held for review. Only one percent are rejected. No trends appear evident in the disposition rates over time or between various sized libraries, except that medium libraries have slightly more revisions and holds.

Table 4-6. Index of disposition of OCLC records found in data base -- academic libraries

	Category of disposition						
		Revised					
	Accepted	Classification and major	Other	Held	Rejected	Unknown	Total
Sample Days							
1-5	.42	.12	.22	.18	.01	.05	1.00
6-10	.44	.16	.22	.16	.01	*	1.00
11-15	.41	.16	.19	.17	.01	.05	1.00
16-20	.40	.14	.22	.14	.02	.07	1.00
21-25	.39	.13	.22	.16	.01	.09	1.00
Library Size							
Small	.46	.09	.20	.14	.01	.09	1.00
Medium	.37	.19	.23	.19	.01	.01	1.00
Large	.42	.13	.20	.16	.02	.07	1.00
Total	.41	.14	.21	.16	.01	.05	1.00

*less that .01

Table 4-7 shows average times per item for cataloging using OCLC records. Results are just slightly less than those for all libraries, so that corresponding times of public libraries will be slightly greater than average. In contrast with the downward trend observed in cataloging time for all libraries, no pattern over the study period seems apparent here. Considering size of library, small and medium size library times are similar while large library times are about one-half minute less per item.

Table 4-7. Average terminal time per item for routine cataloging using OCLC records -- academic libraries

	Average time per item searched	Average time per item cataloged*	Average time including hold time per item cataloged**
Sample Days			
1-5	4.3 minutes	5.9 minutes	7.2 minutes
6-10	3.9	5.7	6.8
11-15	4.6	6.1	7.4
16-20	4.1	5.5	6.5
21-25	4.1	5.9	7.1
Library Size			
Small	4.5 minutes	6.1 minutes	7.2 minutes
Medium	4.7	6.0	7.4
Large	3.9	5.6	6.7
Total	4.2 minutes	5.8 minutes	7.0 minutes

*rejects not included as items cataloged
**neither holds nor rejects included as items cataloged

4.2.2 Inputting Records into the OCLC Data Base

Record inputting accounts for 17 percent of all terminal time and four percent of items processed in academic libraries. In terms of volume, the range is from four percent for medium-sized libraries to six percent for small and eight percent for large libraries. Average time per input use is shown in Table 4-8.

Table 4-8. Average terminal time per cataloging record input - academic libraries

	Average terminal time per input record		
	Original cataloging	Routine cataloging	Combined
Sample Days			
1-5	13.1 minutes	11.7 minutes	12.5 minutes
6-10	14.1	13.6	13.9
11-15	11.7	9.9	10.9
16-20	10.2	10.2	10.2
21-25	9.5	12.1	10.5
Library Size			
Small	17.1 minutes	13.3 minutes	14.5 minutes
Medium	12.6	10.4	11.3
Large	9.9	9.8	9.9
Total	11.4 minutes	11.4 minutes	11.4 minutes

As noted for all libraries, a downward trend is evident in time spent inputting an original cataloging record, with more fluctuation in the time of routine cataloging input. Variations are also observable among small, medium, and large libraries, with small library times substantially above average, medium somewhat less, and times for large libraries quite low. As in other circumstances, the low large library times may result from experience gained through processing a greater volume of materials on the terminal.

4.2.3 Record Updates

It should again be restated that record update as defined in data collection (i.e., the entry of additional data to an already existent record) differs from that used by OCLC, which exludes any use involving card production. (See Glossary.) This difference caused some confusion and may affect the validity of these results.

Record updating of OCLC records as reported in medium and large sized libraries has been relatively limited (less than two percent of terminal utilization and volume thruput).In small academic libraries, however, record updating accounts for 13 percent of time spent and 31 percent of records searched. Thus, average times shown in Table 4-9 for record updating are based on only 574 items processed by medium and large libraries but 4,647 items processed by small libraries. The most reliable figure, the overall average, indicates a time of 2.3 minutes per record updated. This time has declined significantly over the study period.

Table 4-9. Average terminal time per record searched for other types of use -- academic libraries

	Average terminal time per record searched for other types of use		
	Record updates	Order department	ILL searches
Sample Days			
1-5	3.7 minutes	1.9 minutes	2.3 minutes
6-10	3.8	2.2	2.8
11-15	3.6	2.1	3.4
16-20	1.6	1.6	2.6
21-25	1.7	1.8	3.7
Library Size			
Small	1.8 minutes	2.0 minutes	9.6 minutes
Medium	10.0	2.0	2.9
Large	4.5	1.6	2.1
Total	2.3 minutes	1.9 minutes	2.9 minutes

4.2.4 Order Department Utilization

Order department use of the terminal for order searching represents an average of eight percent of time utilized and nineteen percent of volume thruput in academic libraries. Medium-sized libraries are considerably more active in this area, with order searching accounting for 35 percent of their volume processed. As shown in Table 4-9, time per item for order department searches has remained fairly constant over the study period, with an average 1.9 minutes.

4.2.5 Interlibrary Loan Utilization

To date, the terminal has not been widely used for interlibrary loan in the academic libraries. Based on a very small sample, then, Table 4-9 suggests that time spent per ILL search is about three minutes.

4.2.6 Utilization of Terminal Time

Table 4-10 shows the daily average time of terminal use over the sample period and for the range of academic libraries. Use over the sample days has been sporadic, but averages out to 406 minutes. By size of library, average terminal time used is greatest in the large libraries, more than an hour less in the medium libraries, and another hour less in the small libraries.

Table 4-10. Utilization of available terminal time -- academic libraries

	Time available per terminal daily	Average time used daily	Average down time daily	Average available unused time daily
Sample Days				
1-5	780 min.	424 min.	30 min.	326 min.
6-10	780	360	18	402
11-15	780	423	13	344
16-20	900	433	10	457
21-25	900	386	87	427
Library Size				
Small	828 min.	336 min.	27 min.	465 min.
Medium	828	399	28	401
Large	828	464	35	329
Combined	828 min.	406 min.	31 min.	391 min.

Excessive down time experienced on May 8 (an average of 429 minutes per terminal) raised the average downtime to 87 minutes during the fifth sample "week". This inflates average downtime over the sample to 31 minutes per day. Combining this figure with the average 406 minutes spent on the terminal per day yields a total of 436 minutes or somewhat over seven hours. This is the major part of a normal eight hour working day, but only slightly over half of the time made available by OCLC. As processing demands increase, libraries may have to change their work habits to better utilize terminals during off hours.

4.3 Cataloging Costs

In keeping with the original intentions of this study, cataloging costs for academic libraries are now considered. Because of the services provided by OCLC only a selected number of activities are presently affected. Among those items are:

- Original cataloging;
- Routine cataloging with cards, card copy or automated systems;
- Card production; and
- Pre-filing.

In this study only those activities most influenced will be examined. Costing and volume information were derived from cataloging activity sheets, which required time data for all cataloging activities, and month-end volume statistics supplied by the cataloging departments. Data were collected for all cataloging department activities, with month-end statistics specifying monographic, serial, and other materials processed. This distinction as to type of material was not made on the activity sheets.

4.3.1 Volume Statistics

One of the major aspects requiring attention is volume thruput achieved since the introduction of OCLC. Because of the variances observed among libraries of different sizes Tables 4-11 through 4-13 represent the total monographic thruput

of small, medium and large libraries respectively. The categories of processing examined are:

- Original cataloging where classification and description is supplied in most part by members of the library staff.
- Routine cataloging where cataloging information is supplied from LC copy, commercial services or automated systems other than OCLC.
- Cataloging from OCLC records where both cards and cataloging data are supplied from an already existing OCLC record.

For these tables, items are considered to be new titles or new editions of monographs requiring cataloging information, description and card sets.

The tables are divided into November and two three-month intervals thereafter. Though for volume statistics this is unnecessary, the tables are more comparable to tables following if so arranged.

Average original cataloging volume thruput for small libraries shown in Table 4-11 does not evidence the clear-cut decline observed in middle and large libraries. This is partially due to the initially limited amount of original cataloging and also to irregularities in reporting among small libraries. Generally, routine cataloging with cards, card copy or automated systems other than OCLC has declined from initial averages of 120 and 158 to 49 titles during the final three months. Unlike medium and large libraries, average monographic thruput did not increase over the study period for the small library.

Table 4-11. Average monthly monographic thruput -- small libraries

Type of Process	Average monthly monograph titles processed per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
Original cataloging	42 titles	52 titles	49 titles	49 titles
Routine cataloging	120	158	49	106
Cataloging from OCLC records	544	425	528	486
Total	706 titles	635 titles	626 titles	641 titles

Medium-size libraries, as is apparent in Table 4-12, show the most definite decreases in original and routine cataloging volume, i.e., 36 and 28 titles respectively. Thruput increased from 1,153 and 1,143 observed during the first four months to 1,297 titles during the latter three months of the study.

Table 4-12. Average monthly monographic thruput - medium libraries

Type of Process	Average monograph titles processed per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
Original cataloging	112 titles	66 titles	76 titles	77 titles
Routine cataloging	181	151	153	156
Cataloging from OCLC records	860	926	1,068	993
Total	1,153 titles	1,143 titles	1,297 titles	1,226 titles

Table 4-13 evidences the increasing volume of original cataloging conducted by large libraries. Original cataloging volume has climbed from an average of 157 to 235 volumes per month even after exclusion of The University of Texas at Austin. This increase may be significant of increased available staff time for original cataloging. Additionally, OCLC may present an incentive to make available records of special holdings owned by large libraries to other members of the OCLC network.

Table 4-13. Average monthly monographic title thrput -- large libraries

Type of Process	Average monograph titles processed per library			
	November	Dec. - Feb.	March - May*	Combined (Nov.-May)
Original cataloging	490 titles (157)	549 titles (187)	528 titles (234)	532 titles (203)
Routine cataloging	516 (535)	285 (337)	218 (235)	289 (322)
Cataloging from OCLC records	1,427 (939)	1,725 (1,203)	2,283 (1,952)	1,922 (1,486)
Total	2,433 titles (1,631)	2,559 titles (1,727)	3,029 titles (2,421)	2,743 titles (2,011)

*No month-end data received from The University of Texas at Austin for May.

Numbers in parenthesis represent averages excluding The University of Texas at Austin.

Routine cataloging with LC cards or card copy from either a commercial or automated source has decreased by 50 percent in large libraries. This substantial decline must logically be attributed to OCLC. For the large library, apparently, OCLC substitutes for LC and commercial card services rather than original cataloging. The overall results of Table 4-13 show the rapid growth of volume thruput from 1,631 to 2,421 titles in the large libraries (excluding The University of Texas at Austin).

4.3.2 Staff Expenditures

To fully appraise the changes produced by OCLC, an overview of expenditures for those activities most relevant must be examined. Hence, Tables 4-14 through 4-19 present both total time and direct salary expenditures observed over the study period. Due to the nature of the sampling of cataloging time sheets (the complete month of November and one week per month thereafter) data is presented in three-month intervals after November. This yields a more accurate estimate of average library costs. These costs reflect the effect of OCLC upon those activities which are presumed to be most affected. These activities defined in the Glossary are as follows:

1. OCLC terminal use
2. Error, duplicate record reporting, etc.
3. Card distribution
4. Pre-cataloging card/card copy routines
5. Routine cataloging with cards and card copy
6. Original cataloging
7. Bibliographic searching
8. Shelf list checking
9. Revising
10. Card production
11. Prefiling

Before continuing, it should be noted that staff costs were derived from direct salary and fringe benefits. Fringe benefits were considered to be all items provided to the employee for which the state, city or institution paid. When salary or fringe benefit information was not available, estimates were made, using comparable positions in similar-sized libraries as guides.

Staff time and costs are first presented as average totals per library, with selected unit costs shown later in Tables 4-20 and 4-21. Increases or decreases in per library statistics can be attributed to a variety of factors, including changes in volume processed (see Tables 4-11, 4-12, and 4-13 for monographic volume processed), changes in the character of the activity performed or the material processed, and changes in personnel. Some salary increases were made during the study period, increasing the costs per unit time slightly. Costs and times presented include those devoted to all volume thruput, monographic as well as non-monographic.

For the small library, OCLC seems to have made some inroads into both original and routine cataloging costs. As Tables 4-14 and 4-15 indicate, significant decreases occurred in those activities most involved in routine and original cataloging (pre-cataloging card routines, revising, cataloging and card production). Average savings for routine cataloging and related pre-cataloging card routines amounted to nearly $89, representing 13 hours, while original cataloging labor investments were reduced by $50 and about four hours. Decreased costs were also realized in card production over the study. While shelf list checking remained relatively stable, bibliographic searching and prefiling costs rose. OCLC-related labor costs have increased from $539 to $667, while time devoted to these activities has risen by 31 hours. Overall time and costs initially rose but appear stable during the final two periods.

Table 4-14. Average monthly labor costs for selected activities - small libraries

Type of Activity	Average monthly labor costs per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
OCLC				
Terminal use	$ 438.38	$ 532.59	$ 578.32	$ 538.73
Error, duplicate record reporting, etc.	33.91	20.00	7.06	16.44
Card distribution	33.04	79.29	50.60	60.39
Other	33.52	52.08	31.10	40.44
Routine cataloging				
Pre-catalog card/card copy routines	43.46	14.52	9.13	16.34
Routine cataloging with cards/card copy	130.26	119.44	75.92	102.33
Original cataloging				
Original cataloging	153.07	136.73	102.99	124.60
General				
Bibliographic searching	78.96	83.50	109.45	93.97
Shelf list checking	26.51	29.73	30.51	29.60
Revising	67.68	35.54	67.56	53.85
Card production	78.36	72.43	55.18	65.88
Prefiling (of catalog cards)	39.36	68.55	120.75	86.75
Total	$1,156.51	$1,244.40	$1,238.57	$1,229.34

Table 4-15. Average monthly staff time devoted to selected activities - small libraries

Type of Activity	Average monthly time per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
OCLC				
Terminal use	127.2 hrs.	152.8 hrs.	158.0 hrs	151.4 hrs.
Error, duplicate record reporting, etc.	12.4	4.9	3.3	5.3
Card distribution	10.4	13.8	15.6	14.1
Other	13.3	14.3	17.4	15.5
Routine cataloging				
Pre-catalog card/card copy routines	6.6	3.2	2.7	3.5
Routine cataloging	27.0	25.8	17.7	22.5
Original cataloging				
Original cataloging	28.2	23.4	23.9	24.3
General				
Bibliographic searching	26.5	24.1	32.9	28.2
Shelf list checking	8.5	7.6	8.2	8.0
Revising	15.4	21.6	19.6	19.9
Card production	32.1	25.4	8.7	19.2
Prefiling (of catalog cards)	15.8	27.5	36.8	29.8
Total	323.4 hrs.	344.4 hrs.	344.8 hrs.	341.7 hrs.

As Tables 4-16 and 4-17 demonstrate, medium-sized libraries have experienced fewer effects upon times and costs than large and small libraries. OCLC related activities have increased by $186, expanding time allocation by about 26 hours. Routine cataloging activities show both time (77 hours as opposed to 82 and 122 hours in the first two intervals) and cost ($464 versus $477 and $519) decreases. Original cataloging times and costs, however, have increased. Since we know that original monographic cataloging volume in medium-sized libraries has decreased over the study period (see Table 4-12), these increases are attributed to increased non-monographic original cataloging.

Table 4-16. Average monthly labor costs for selected activities -- medium libraries

Type of Activity	Average monthly labor costs per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
OCLC				
Terminal use	$ 598.67	$ 612.90	$ 658.58	$ 630.44
Error, duplicate record reporting, etc.	13.14	18.77	23.08	19.81
Card distribution	91.71	138.62	140.39	132.68
Other	33.68	80.58	101.11	82.68
Routine cataloging				
Pre-catalog card/card copy routines	15.48	26.50	31.05	26.88
Routine cataloging	461.85	492.73	433.36	462.87
Original cataloging				
Original cataloging	503.24	1,160.62	1,101.15	1,041.02
General				
Bibliographic searching	289.53	267.06	336.04	299.83
Shelf list checking	65.03	77.52	71.79	73.28
Revising	261.13	293.04	289.18	286.83
Card production	332.88	328.90	334.97	332.07
Prefiling (of catalog cards)	275.19	278.49	208.80	248.15
Total	$2,941.53	$3,775.73	$3,729.50	$3,636.54

Table 4-17. Average monthly staff time devoted to selected activities -- medium libraries

Type of Activity	Average monthly time per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
OCLC				
Terminal use	167.0 hrs.	180.1 hrs.	169.2 hrs	173.6 hrs.
Error, duplicate record reporting, etc.	2.4	4.7	3.2	3.7
Card distribution	27.4	37.5	42.6	38.2
Other	17.1	20.7	24.4	21.8
Routine cataloging				
Pre-catalog card/card copy routines	6.2	12.8	8.0	9.8
Routine cataloging	75.8	109.1	68.7	87.0
Original cataloging				
Original catloging	154.2	203.6	170.8	132.5
General				
Bibliographic searching	76.1	62.3	72.6	68.7
Shelf list checking	13.8	13.7	15.3	14.4
Revising	51.7	55.0	45.9	50.62
Card production	144.1	150.4	128.0	139.9
Prefiling (of catalog cards)	108.2	116.6	83.6	101.3
Total	844.0 hrs.	966.5 hrs.	832.3 hrs.	891.5 hrs.

Tables 4-18 and 4-19 display average monthly costs and times as reported by large libraries. As with other sized libraries, OCLC costs and times have increased. Notable, though, is the fact that time devoted to OCLC terminal use has increased far above corresponding costs. This could indicate a greater reliance on support staff to perform operator duties. As would be expected in light of Table 4-13, routine cataloging costs and time have decreased, while original cataloging has gained $436 and nearly 73 hours. Labor costs for general activities (i.e., bibliographic searching, shelf list checking, etc.) oscillate, though time devoted to card production has decreased.

Table 4-18. Average monthly labor costs for selected activities -- large libraries

Type of Activity	Average monthly labor costs per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
OCLC				
Terminal use	$1,120.64	$1,103.49	$1,192.22	$1,143.97
Error, duplicate record reporting, etc.	11.28	17.85	9.28	13.24
Card distribution	270.43	392.09	315.83	342.03
Other	299.39	315.16	319.77	314.88
Routine cataloging				
Pre-catalog card/card copy routines	67.22	53.36	50.69	54.20
Routine cataloging	743.17	551.32	439.53	530.82
Original cataloging				
Original cataloging	1,949.72	2,383.48	2,385.79	2,322.50
General				
Bibliographic searching	606.47	574.35	706.74	635.68
Shelf list checking	83.07	116.81	95.38	102.81
Revising	542.49	518.00	593.11	553.69
Card production	270.43	392.09	315.83	342.03
Prefiling (of catalog cards)	647.66	670.94	504.11	596.12
Total	$6,611.97	$7,088.94	$6,928.28	$6,951.57

Table 4-19. Average monthly staff time devoted to selected activities - large libraries

Type of Activity	Average monthly time per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
OCLC				
Terminal use	242.2 hrs.	284.2 hrs.	305.8 hrs	287.5 hrs.
Error, duplicate record reporting, etc.	2.3	4.2	1.6	2.8
Card distribution	64.9	46.4	86.7	66.3
Other	58.1	73.2	74.5	71.6
Routine cataloging				
Pre-catalog card/card copy routines	24.2	18.6	17.6	19.0
Routine cataloging	194.4	142.2	110.1	135.9
Original cataloging				
Original cataloging	325.8	392.5	398.4	385.5
General				
Bibliographic searching	140.4	140.9	186.3	160.3
Shelf list checking	16.8	24.6	23.0	22.8
Revising	95.9	89.0	98.8	94.2
Card production	187.1	142.5	110.4	135.1
Prefiling (of catalog cards)	205.4	245.2	194.6	217.8
Total	1,557.5 hrs.	1,603.5 hrs.	1,607.8 hrs.	1,598.8 hrs.

Table 4-20 examines average unit costs for certain activities. With the exceptions of card production and prefiling, units are considered titles. This table does not portray the effects of OCLC, but rather the activities which would be most influenced by OCLC. It should be noted that these are average costs of all types of materials processed through the selected activities. Thus, serials and other non-monographic items are also included in the base (see Appendix A for specific assumptions made regarding thruput). Variances between different sizes of libraries are largely due to salary differences, volume thruput and available equipment. To a great extent, the cost of original cataloging, at least, is also influenced by types of materials being processed. It is assumed more likely that large libraries handle special materials requiring increased expertise and greater time.

Table 4-20. Average unit costs for selected activities - academic libraries

Type of Activity	Average unit cost			
	Large	Medium	Small	Combined
LC/commercial card pre-cataloging routine	$ .21	$ .04	$ .04	$ .10
Routine cataloging	1.88	.81	.45	1.05
Original cataloging	3.36	2.50	.64	2.20
Bibliographic searching	.45	.32	.90	.56
Shelf list checking	.03	.08	.05	.05
Revision	.50	.21	.11	.27
Card production (per card costs)	.05	.05	.16	.09
Prefiling (per card costs)	.07	.08	.07	.07

Finally, Table 4-21 presents average labor costs for terminal use. Increased hourly costs in small and medium libraries can be largely accounted for by salary increases. The decline in hourly costs in large libraries may be due to a greater reliance upon clerical staff in terminal operations. Hourly labor costs for additional activities can be calculated from total cost and time data as shown in Tables 4-14 through 4-19.

Table 4-21. Hourly labor cost - OCLC terminal use

Type of library	Hourly staff cost of OCLC terminal use			
	November	Dec. - Feb.	March - May	Combined
Small	$ 3.45	$ 3.49	$ 3.66	$ 3.56
Middle	3.58	3.40	3.89	3.63
Large	4.63	3.88	3.90	3.98
Combined	$ 3.89	$ 3.59	$ 3.82	$ 3.73

5. NEW MEXICO LIBRARIES

5.1 Introduction

In this section New Mexico libraries are treated separately to meet contractual agreements. Beyond that, New Mexico libraries faced a unique situation of increased acquisitions without supplemental technical services staff. A recent bond issue doubled the book buying budget for a period of five years. Hence, OCLC was looked to as a possible aid to the limited staff. Moreover, New Mexico's interest in cooperative endeavors in the library area increased the appeal that OCLC represented.

The New Mexico libraries studied herein are:

- Eastern New Mexico University
- New Mexico State University
- University of New Mexico

As their profiles indicate (Appendix A), they are small, medium, and large sized libraries, respectively. However, New Mexico State University is classified in the large-receiving library category based on its annual acquisitions.

5.2 OCLC Terminal Use

Appendix C, Table C-2 summarizes data taken from New Mexico terminal log sheets for the sample days under consideration. The following section is based on these summaries. Results by type of use follow in Tables 5-1 and 5-2.

Table 5-1. Average daily time at terminal by type of use -- New Mexico

Type of Use	Average daily time at terminal	Percent of total time at terminal
Cataloging from OCLC record	360 minutes	78%
Input-original cataloging	38	8
Input-routine cataloging	27	6
Record updates	7	2
Order department use	13	3
ILL department use	1	*
Other	15	3
Total	461 minutes	100%

*less than one percent

Table 5-2. Average daily volume processed at terminal by type of use -- New Mexico

Type of Use	Average daily volumes processed	Percent of total volume processed
Cataloging from OCLC record	81 items	87%
Input-original cataloging	2	3
Input-routine cataloging	2	2
Record updates	1	1
Order department use	5	6
ILL department use	1	1
Other		
Total	92 items	100%

5.2.1 Routine Cataloging Using OCLC Records

Routine cataloging using OCLC records represents 78 percent of all utilized terminal time and 87 percent of all volume thruput, somewhat larger percentages than those for all medium and large sized academic libraries (see Tables 3-1 and 3-2). As Table 5-3 illustrates, routine cataloging at the terminal has generally expanded. The decline experienced in the second period can be accounted for by the holiday period, while the fifth period decline was due to extreme down times. As might be expected the volume data reflects much the same pattern. Despite the seemingly erratic average times and volumes shown, the percentage of all volume thruput represented by this activity has remained stable at about 87 percent.

Table 5-3. Average daily time at terminal spent in cataloging from OCLC records -- New Mexico

Sample Days	Average daily time at terminal	Percent of total time at terminal
1-5	353 minutes	76%
6-10	292	74
11-15	360	78
16-20	431	84
21-25	348	78
1-25	357 minutes	78%

Table 5-4. Average daily volume processed at terminal for cataloging from OCLC records -- New Mexico

Sample Days	Average daily volume processed	Percent of total volume processed
1-5	78 items	88%
6-10	59	87
11-15	77	87
16-20	99	86
21-25	87	86
1-25	80 items	87%

Table 5-5 shows the find ratio hovering around 72 percent and independent of time. Since many items thought not to be in the data base (e.g., pre-1956 imprints and special collections) are presently processed through OCLC, this is an especially good find ratio. The declining difference between the adjusted and simple "find" ratios indicates a decrease in records held and a greater confidence in accepting records. Table 5-6, an index of disposition for OCLC records found, also illustrates this declining hold rate. As indicated, 3[illegible] percent of these records were accepted, while only five percent required major revision and 32 percent minor revision.

Table 5-5. "Find" ratios for routine cataloging using OCLC records - New Mexico

Sample Days	Simple "find" ratio	Corrected "find" ratio*	Adjusted "find" ratio**
1-5	70%	69%	64%
6-10	78	77	74
11-15	72	72	71
16-20	71	70	68
21-25	70	70	69
1-25	72%	72%	69%

*eliminating rejected records from both numerator and denominator

**eliminating records recalled from save or retrieved by OCLC number from both numerator and denominator

Table 5-6. Index of disposition of OCLC records found in data base -- New Mexico

Sample Days	Category of use						
	Accepted	Revised		Held	Rejected	Unknown	Total
		Classification and major	Other				
1-5	.37	.07	.24	.20	.03	.09	1.00
6-10	.30	.04	.39	.14	.01	.11	1.00
11-15	.35	.06	.35	.04	.02	.17	1.00
16-20	.44	.05	.34	.06	.04	.08	1.00
21-25	.35	.04	.33	.06	.02	.20	1.00
1-25	.37	.05	.32	.10	.03	.13	1.00

Average time per cataloging search of OCLC records, as indicated in Table 5-7, has generally been 4.4 minutes. This includes both successful and unsuccessful searches. This exhibits an indistinct learning curve or experiential factor. However, in looking at time spent per item cataloged, one can easily discern a downward trend from almost seven minutes to less than six minutes per item. Even more pronounced is the final column of figures. Holds, records which will later be recalled for cataloging purposes prior to final disposition, are deleted from the numerator yielding only records actually produced. An additional factor is working in this downward trend from almost nine to six minutes. As mentioned earlier, the amount of holds have declined significantly indicating a greater acceptance of records and greater authorization of staff members to produce records without final review by professional librarians.

Table 5-7. Average terminal times per item for routine cataloging using OCLC records -- New Mexico

Sample Days	Average time per item searched	Average time per item cataloged*	Average time including hold time per item cataloged**
1-5	4.5 minutes	6.8 minutes	8.6 minutes
6-10	4.9	6.5	7.6
11-15	4.6	6.6	6.9
16-20	4.4	6.4	6.8
21-25	4.0	5.7	6.1
1-25	4.4 minutes	6.4 minutes	7.2 minutes

*rejects not included as items cataloged
**neither holds nor rejects included as items cataloged

5.2.2 Inputting Records into the OCLC Data Base

Turning to Table 5-8, one notes the sporadic average times for inputting original cataloging data over the seven month period. The inflated figure for period three may in part be due to slow turnarounds. During period five, extreme periods of down time may have hindered inputting times. Routine cataloging input also exhibits no clear trends, and variations between the two forms of input demonstrate nothing in the way of a pattern. The overall variation between original and routine inputs, 15.6 and 12.2 minutes respectively, is to be expected because of added precautions or hesitancy in inputting original cataloging. In general, average times are somewhat above the average for all academic libraries (see Table 4-7).

Table 5-8. Average time per record for inputting original and routine cataloging -- New Mexico

Sample Days	Average terminal time per record use		
	Original cataloging	Routine cataloging	Combined
1-5	16.3 minutes	9.3 mirutes	12.1 minutes
6-10	12.5	13.5	12.8
11-15	24.4	11.8	21.8
16-20	11.4	12.2	11.7
20-25	13.2	14.2	13.9
1-25	15.6 minutes	12.2 minutes	14.5 minutes

5.2.3 Record Updates

It should be emphasized that record updating as defined for data collection purposes differed from that defined by OCLC. This difference may have caused some errors in reporting, diminishing the validity of these results. Record updates account for only about one percent of all OCLC utilization in the New Mexico libraries. This, in part, accounts for the erratic average times shown in Table 5-9. Generally, though, the average time spent in updating a record is 6.4 minutes.

Table 5-9. Average time for other types of use -- New Mexico

Sample Days	Average terminal time per use		
	Record updates	Order department	ILL searches
1-5	3.3 minutes	2.5 minutes	- minutes
6-10	7.5	3.0	-
11-15	4.1	3.0	-
16-20	6.4	1.8	0.9
20-25	4.4	2.7	1.0
1-25	6.4 minutes	2.6 minutes	0.9 minutes

5.2.4 Order Department Use

Three percent of terminal time used and six percent of volume thruput can be attributed to the order department. Again no pattern can be discerned in average times over the study period. What appears likely is that the limited use (averaging 13 minutes per day) by the department has not enabled order department operators to acquire additional skill. Too, records are now being produced and recorded as a pre-cataloging routine by the order department for the cataloging department.

5.2.5 Interlibrary Loan Use

Interlibrary loan utilization of the terminal has been relatively slight. Presently only two of the institutions in New Mexico are generally using the terminal for ILL purposes. For this reason no use appears during the first three sample "weeks." The ILL searches appearing in the final periods indicates a good search rate of about one minute per item. However, until there is more regular use by ILL departments, no conclusions may be drawn.

5.2.6 Utilization of Terminal Time

Utilization of terminal time has generally increased. As Table 5-10 indicates, the final period represents an exception. However, observing that the average available unused time declined during this period, decreased use was in fact due to the extreme downtime. The average downtime of 117 minutes noted in the fifth interval is particularly due to May eighth malfunctions when an average of 583 minutes downtime per terminal was experienced in New Mexico.

Over the sample period, average terminal time used was 453 minutes and average down time was 32 minutes, for a total of 485 minutes. This is five minutes more than the normal eight hour working day and about 58 percent of terminal time made available by OCLC.

Table 5-10. Utilization of available terminal time - New Mexico

Sample Days	Time available per terminal	Average time used	Average down time	Average available unused time
1-5	780 min.	458 min.	23 min.	299 min.
6-10	780	403	7	370
11-15	780	461	9	310
16-20	900	502	6	392
21-25	900	450	117	333
1-25	828 min.	453 min.	32 min.	343 min.

5.3 Cataloging Costs

Since New Mexico represents only three reporting institutions, unit costs and times have been combined with other academic results (Section 4.3) for greater accuracy. However, in order to ascertain some specific information concerning New Mexico, the following presents average volume and expenditure statistics.

The data presented in Table 5-11 shows that the average number of new titles processed monthly is increasing. This growth is particularly credited to OCLC thruput which was increased by over 900 titles. As has been noted for other academic libraries, routine cataloging with cards, card copy or pre-processed services has dropped off by 605 titles. The increase in original cataloging follows the same pattern noted in large academic libraries earlier (see Section 4.3).

Table 5-11. Average monthly monograph title thruput -- New Mexico

Type of process	Average monthly monograph titles processed per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
Original cataloging	120 titles	192 titles	250 titles	207 titles
Routine cataloging	910	448	305	453
Cataloging from OCLC records	1,116	1,226	1,960	1,525
Total	2,146 titles	1,866 titles	2,515 titles	2,185 titles

Tables 5-12 and 5-13 reflect these changing process allocations. Terminal and OCLC related activities have generally increased, though not as dramatically as Table 5-11 might indicate. This must, in part, be credited to increased operator efficiency. Routine cataloging activities have been trimmed by 137 hours and nearly $460. Original cataloging on the other hand was incremented by about $350 and 60 hours per month. Other activities show some fluctuations, but have overall remained relatively stable despite increased thruput.

Table 5-12. Average monthly staff time devoted to selected activities -- New Mexico

Type of activity	Average monthly time per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
OCLC				
Terminal use	191.4 hrs.	224.7 hrs.	215.2 hrs	215.9 hrs.
Error, duplicate record reporting, etc.	2.8	4.2	1.3	2.8
Card distribution	27.0	53.1	43.3	45.2
Other	25.2	35.2	17.4	26.1
Routine cataloging				
Pre-catalog card/card copy routines	38.9	28.1	23.8	27.8
Routine cataloging	204.6	109.2	82.2	111.3
Original cataloging				
Original cataloging	137.0	182.7	197.1	182.3
General				
Bibliographic searching	69.0	57.4	82.7	69.9
Shelf list checking	18.3	27.1	19.6	22.6
Revising	77.3	34.4	74.7	57.8
Card production	25.2	35.2	17.4	26.1
Prefiling (of catalog cards)	67.5	70.6	68.7	69.3
Total	884.2 hrs.	861.9 hrs.	843.4 hrs.	857.1 hrs.

Table 5-13. Average monthly labor costs for selected activities -- New Mexico

Type of activity	Average monthly labor costs per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
OCLC				
Terminal use	$ 759.81	$ 774.92	$ 771.08	$ 771.12
Error, duplicate record reporting, etc.	10.91	14.08	6.38	10.33
Card distribution	84.57	137.39	91.47	110.16
Other	276.00	223.08	200.51	220.97
Routine cataloging				
Pre-catalog card/card copy routines	133.63	91.97	75.51	90.87
Routine cataloging	693.32	615.89	292.2	488.23
Original cataloging				
Original cataloging	749.05	1,047.88	1,106.43	1,030.28
General				
Bibliographic searching	199.83	206.47	275.69	235.19
Shelf list checking	63.53	110.45	64.80	84.18
Revising	241.29	164.52	279.49	224.76
Card production	276.00	223.08	200.51	220.97
Prefiling (of catalog cards)	204.21	204.04	198.44	201.66
Total	$ 3692.15	$ 3313.77	$3,562.51	$3,688.72

PART III
PUBLIC LIBRARIES

The public libraries participating in this evaluation were:

- Dallas Public Library
- Fort Worth Public Library
- Irving Public Library
- Irving Independent School District
- Texas State Library

These participants present a special case apart from the academic segment. Even among themselves they differ dramatically in size, volume thruput, staff sizes and procedures. Beyond a chapter on general results, separate chapters in this section are devoted to Dallas Public, the largest public library, and Irving Independent School District.

The cataloging requirements necessitated by the branch libraries of public libraries are unique. This circumstance predicts high volume and card per title ratios. Hit charges, spread over the volumes represented, are to a degree lowered as indicated in Chapter 7, Dallas Public Library. At the same time, however, we find a higher unit time at the terminal than observed in academic libraries, 11.1 minutes as opposed to 7 minutes. Revision, required on nearly 50 percent (84 percent if holds are included as items revised) of all records may in part be responsible for this time differential. Forty-two percent of the records found in academic libraries are accepted.

Public library terminal use does not exhibit the same diverse use noted in academic libraries. Eighty-five percent of terminal utilization in public libraries was devoted to routine cataloging from OCLC records. Public libraries use the terminal, on the average, for 267 minutes a day, about 3.5 hours less than the eight hour working day. Daily terminal utilization, however, does range significantly as might be expected due to the varying sizes and volume thruput.

Considering all monographic cataloging operations, changes can be noted in the percentage of title thruput processed by various methods. Original cataloging decreased by 56 percent while routine cataloging with cards or card copy increased by 50 percent.

Monthly card production costs in the public libraries far exceed those previously noted in even large academic libraries -- $1545.54 versus $342.03. This largest observed cost decreased by 32 percent over the study period.

It is particularly evident in examining the parallel operations at Dallas Public (Chapter 7) that costs, regardless of system, are dependent upon volume and card per title ratios. At Dallas Public, an average 10.0 minutes per volume was observed in the OCLC system. In the manual system the comparative time was 10.6 minutes. Cost conclusions were reversed with a $.92 per volume cost for items processed manually and $1.41 per volume for items in the OCLC system.

For the Irving Independent School District, 93 percent of all utilized terminal time was devoted to routine cataloging. The find ratio was 88 percent, higher than that observed in other groups of libraries. Of those records found, 89 percent were revised. Perhaps most significant was the increased cooperation between the school district and the public library.

Further information related to the public libraries participating in this study can be found in Chapter 3, Comparison of Cataloging Costs, and Appendix D, Summary of Site Visits.

6. ALL PUBLIC LIBRARIES

6.1 Introduction

The following chapter is a summary of data from the public and school libraries involved in the evaluation. The libraries represented are:

Dallas Public Library
Fort Worth Public Library
Irving Public Library
Irving Independent School District
Texas State Library

These public libraries present a unique situation as to staffing, procedures, costs and needs. This initial year of participation in the OCLC system has been a pilot program; as a result, major procedural changes or policy adjustments in many cases have been limited. With the exception of the Texas State Library, OCLC sections have been established apart from existing cataloging departments. This organizational separation has been ameliorated by the cooperation of the staffs of these departments. Nevertheless, it has discouraged major policy/procedural adaptations in cataloging. Insofar as policies and procedures may effect ultimate output, the public libraries present a special case.

Another concern, of course, is the tentative and perhaps temporary participation of these libraries in the system. Procedural changes of any radical scale would necessitate

another revamping at the end of the year if participation were discontinued. These circumstances are not unique to the public libraries in the study, but do pose difficulties in predicting what will occur given a continued commitment and future adjustments to OCLC. Unlike most of the academic libraries, new staff were hired specifically for participation in the OCLC system, further complicating the initial stages of data collection. The new difficulty this presents is the additional training necessary to equip the OCLC users with a knowledge of the library's cataloging procedures as well as developing necessary skills as terminal operators. This causes an inflated training cost not ordinarily incurred.

Special consideration of multiple copy and duplicate card sets is especially warranted for public libraries. Unlike the academic library, the requirements of multiple branches faced by the public libraries significantly increase the work load handled by limited staffs of cataloging departments. Such activities as card production and physical processing become key factors for the public library.

6.2 OCLC Terminal Use

Appendix C, Table C-5 summarizes data taken from the public library terminal log sheets for the sample days. Results by type of use follow.

As tables 6-1 and 6-2 indicate, public library utilization is considerably lower than that of the general population. This is true of all categories of use except for interlibrary loan, which daily averages six minutes and three volumes more in utilization figures than the general population. Average total time at the terminal for the public libraries was 267 minutes, with 52 items processed.

6.2.1 Routine Cataloging Using OCLC Records

As indicated by Tables 6-1 and 6-2, 85 percent of all time utilized and 84 percent of all volume thruput at the terminal in participating public libraries is devoted to routine cataloging using OCLC records. Table 6-3 shows more explicitly what these percentages represent in terms of time and volume, suggesting a general increase in volume thruput and a more sporadic pattern of time utilized. The overall average daily time spent in this activity is 245 minutes, while volume thruput averages 44 items.

These figures, and others which follow, consider average times only for those terminals reported in use. This is in contrast to the figures of Tables 6-1 and 6-2, for which calculations made included the consideration of libraries reporting no terminal use. Thus, Tables 6-1 and 6-2 reflect averages of all the public libraries, while subsequent tables indicate results for libraries using their terminals on the sample days.

Table 6-1. Average daily time at terminal by type of use -- public libraries

Type of Use	Average daily time at terminal	Percent of total time at terminal
Cataloging from OCLC record	227 minutes	85%
Input-original cataloging	7	2
Input-routine cataloging	9	3
Record updates	1	1
Order department use	2	1
ILL department use	10	4
Other	11	4
Total	267 minutes	100%

Table 6-2. Average daily volume processed at terminal by type of use -- public libraries

Type of Use	Average daily volume processed	Percent of total volume processed
Cataloging from OCLC record	44 items	84%
Input-original cataloging	0.5	1
Input-routine cataloging	1	2
Record updates	0.5	1
Order department use	1	2
ILL department use	5	10
Total	52 items	100%

Table 6-3. Average daily time at terminal and volume processed in cataloging from OCLC records -- public libraries

Sample Days	Average daily time at terminal	Average daily volume processed
1-5	211 minutes	31 items
6-10	268	44
11-15	226	34
16-20	278	61
21-25	250	34
1-25	245 minutes	44 items

Because of the somewhat different nature of public library collections, the find ratios for the public library sector shown in Table 6-4 are especially noteworthy. Table 6-4 displays the "find" ratio noted in searching the OCLC base for cataloging records. Three types of "find" ratios are given in this table. The simple "find" ratio is derived directly from raw data without consideration of either records rejected or held. If only utilized or "valuable" records are to be considered finds, then some adjustment is necessary for rejected records. However, because rejection does not necessarily reflect a faulty or unuseful record, consideration of this record should be subtracted from both search (denominator) and find (numerator) totals. This corrected "find" ratio is shown in column two of Table 6-4. The variation caused by this adjustment is minimal. Further refinement need be made to account for items held. If holds may be characterized as items retrieved by OCLC number or from save files rather than by normal search routines, then they inflate the "find"

Table 6-4. "Find" ratios for routine cataloging using OCLC records -- public libraries

Sample Days	Simple "find" ratio	Corrected "find" ratio*	Adjusted "find" ratio**
1-5	83%	83%	75%
6-10	83	83	78
11-15	87	87	82
16-20	77	76	67
21-25	64	64	48
1-25	78%	78%	69%

*eliminating rejected records from both numerator and denominator

**eliminating records recalled from save or retrieved by OCLC number from both numerator and denominator

ratio significantly. Thus, the final column of Table 6-4 reflects the adjusted "find" ratio after the elimination of holds from both search and find totals. With the the single exception of the final sample week, the find ratio is higher than that of the general population. However, the adjustment made by the holding procedure is greater than the norm, which brings the find ratio down to that of the generalized results. Rejection in no instance affected the find ratio by a percentage point. It should be noted that the final sample week data was incomplete at the time of analysis (only 14 out of an expected 20 reports), hence bringing into question the accuracy of the final period data.

Table 6-5 presents an index of disposition for OCLC records located. As might be expected, this index has a very different configuration from that of Table 2-8. Only six percent of records found are reported accepted without revision, as compared to 38 percent for all libraries. Classification and major revisions are performed on a fairly high 26 percent of all records found. This is primarily due to the Dewey decimal classification scheme followed by public libraries. Other types of revisions, generally required of 23 percent of records found, is similar to that found in the general population. The public library sector more regularly holds records, as indicated by the 35 percent average in comparison to the generalized result of eighteen percent.

Table 6-5. Index of disposition of OCLC records found in data base -- public libraries

Sample Days	Category of disposition						
	Accepted	Revised		Held	Rejected	Unreported	Total
		Classification and major	Other				
1-5	.05	.19	.19	.37	.01	.19	1.00
6-10	.10	.29	.16	.27	.01	.17	1.00
11-15	.08	.36	.22	.32	*	.02	1.00
16-20	.04	.23	.36	.35	*	.02	1.00
21-25	.04	.22	.16	.48	.00	.10	1.00
1-25	.06	.26	.23	.35	*	.10	1.00

*less than .01

Table 6-6 displays average times per item for cataloging using OCLC records. Due to the higher revision and holding rates exhibited in Table 6-5, it is not surprising that average times are somewhat higher than the norms shown in Table 2-9. Revision of cataloging records would presumably be more time consuming than acceptance of cataloging records. Further discrepancy from the norm is caused by the high volume per title ratio unique to public libraries. This factor requires recalling and re-editing records several times. Average times per item searched show a definite decrease from 6.9 minutes initially to 4.7 minutes during the final sample period. Average time per item cataloged seems to have fluctuated, but overall exhibits some decrease. Because of the holding policy within the public library, averages incurred after adjusting for items held are distinctly unpatterned.

Table 6-6. Average terminal times per item for routine cataloging using OCLC records -- public libraries

Sample Days	Average time per item searched	Average time per item cataloged*	Average time included hold time per item cataloged**
1-5	6.9 minutes	8.3 minutes	13.3 minutes
6-10	6.1	7.4	10.1
11-15	6.6	7.6	11.1
16-20	4.6	6.1	9.3
21-25	4.7	7.3	13.9
1-25	5.6 minutes	7.2 minutes	11.1 minutes

*rejects not included as items cataloged
**rejects and holds not included as items cataloged

6.2.2 Inputting Records into the OCLC Data Base

Record inputting accounts for five percent of all terminal time and three percent of items processed. Average time per item input is higher than average times for other activities. Original cataloging input shows a definite downward trend from 25.8 minutes in the first period to ten minutes during the final period. At the same time, it should be observed, input volume declined somewhat. Routine cataloging input averages show more fluctuations, arriving at an overall average of 13.3 minutes per item input.

The contrast between the two average times - 16.4 and 13.3 minutes - is less marked if the figure of 25.8 minutes for original cataloging in the first sample week is removed as suspect data. Combined average times for the two activities over the entire study period were 14.4 minutes per item input.

Table 6-7. Average time per item for inputting original cataloging records

Sample Days	Average time per input use		
	Original cataloging	Routine cataloging	Combined
1-5	25.8 minutes	12.6 minutes	12.1 minutes
6-10	14.7	16.9	17.2
11-15	12.0	14.5	14.0
16-20	-	8.3	8.3
20-25	10.0	15.0	10.6
1-25	16.4	13.3	14.4

6.2.3 Record Updates

Record updates, as defined for data collection purposes, specified the input of additional data to an already existing record. This included notification of additional copies or withdrawals and requests for additional cards. This differs from the OCLC definition which excludes any use involving card production (see Glossary). This descrepancy caused some errors in reporting thereby diminishing the validity of results.

Record updating of OCLC records within public libraries has been relatively limited, accounting for barely one percent of terminal utilization and volume thruput. Average time per item for this very small sample was 3.2 minutes, as shown in Table 6-8.

Table 6-8. Average per item terminal times for other types of use -- public libraries

Sample Days	Average times for other types of use		
	Record updates	Order department	ILL searches
1-5	3.9 minutes	- minutes	2.5 minutes
6-10	-	-	2.2
11-15	-	2.0	2.4
16-20	2.9	-	1.6
20-25	3.2	.8	1.7
1-25	3.2 minutes	1.7 minutes	2.1 minutes

6.2.4 Order Department Use

This activity was also a relatively minor one. Since it was not established policy within the public libraries for order searches to be conducted at the terminal, these figures are subject to a great deal of variance. Some libraries reported no order department use of the terminal at all. For the 109 searches reported, an overall average of 1.7 minutes per search was achieved.

6.2.5 Interlibrary Loan Utilization

Searches for interlibrary loan represented four percent of all terminal time and ten percent of all searches. Average searching time, as indicated in Table 6-8 has generally decreased, with an overall average of 2.1 minutes per search. This is very similar to the 2.4 minute average for all libraries.

6.2.6 Utilization of Terminal Time

Utilized terminal time per day, as shown in Table 6-9, averages 268 minutes for public libraries, with wide fluctuations among individual libraries. The range observed for the sample weeks was from four to five hours per day. Down time declined over time, with the exception of the fifth sample week which registered the highest average down time. The overall average down time was 27 minutes per day. The particularly high average noted in the fifth interval is largely due to extreme downtime (450 minutes per terminal) reported on May 8. This was due to an undetected bad port.

Combining the average terminal time plus downtime yields a total of 295 minutes, or nearly five hours. This is not a large number when compared with either the normal eight hour working day or with the time made available by OCLC.

Table 6-9. Utilization of available terminal time

Sample Days	Time available per terminal daily	Average time used daily	Average down time daily	Average available unused time daily
1-5	780 min.	260 min.	29 min.	491 min.
6-10	780	295	10	475
11-15	780	280	7	493
16-20	900	281	1	638
21-25	900	238	96	566
1-25	828 min.	268 min.	27 min.	533 min.

6.3 Cataloging Costs

In keeping with the original intentions of this study, cataloging costs for public libraries are now considered. Because of the services provided by OCLC only a selected number of activities are presently affected. Among those items are:

- Original cataloging;
- Routine cataloging with cards, card copy or automated systems;
- Card production; and
- Prefiling.

In this study only those activities most influenced will be examined. Costing and volume information were derived from cataloging activity sheets, which required time data for all cataloging activities, and month-end volume statistics supplied by the cataloging departments.

Before investigation of public library costs is discussed, certain issues must be given attention. The public libraries present a unique segment of this study as discussed earlier. For this reason, exception must be made to much of the data presented herein. Beyond the unique staffing, procedures, costs and needs of the public library, the unusual circumstance of this initial year of OCLC participation and special funding further complicate costing results. Unlike the academic libraries, new staff were hired specifically for participation in the OCLC system. Hence additional training time necessary to equip OCLC users with a knowledge of the library's cataloging procedures as well as developing the necessary skills as terminal operators has inflated activity costs and corresponding times.

6.3.1 Volume Statistics

One of the major aspects requiring attention is volume thruput achieved since the introduction of OCLC. The categories of processing examined in Table 6-10 are:

- Original cataloging where classification and description is supplied in most part by members of the library staff.
- Routine cataloging where cataloging information is supplied from LC copy, commercial services or automated systems other than OCLC.
- Cataloging from OCLC records where both cards and cataloging data are supplied from an already existing OCLC record.

Items or volume data for these tables are considered to be new titles or new editions of monographs requiring cataloging information, description and card sets.

The following tables are divided into November, and two three month intervals thereafter. Though for volume statistics this is unnecessary, the tables are more comparable to tables following if so arranged.

There has been a very clear decrease in original cataloging of monographs, (from 123 to 54 titles) while routine cataloging with cards, card copy or pre-processed items has unexpectedly risen by 277 titles. This increase coupled with a lesser increase in OCLC thruput accounts for overall growth in cataloging production. The figures presented for OCLC thruput are somewhat misleading. Record use of OCLC has increased consistently for the public libraries, but, due to the high volume per title ratio unique to public libraries records are recalled often. This type of use was considered a record update for this study (see Glossary), and is not included in the figures of Table 6-10.

Table 6-10. Average monthly monographic thruput -- public libraries

Type of Process	Average monographic titles per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
Original cataloging	123 titles	122 titles	54 titles	93 titles
Routine cataloging	538	666	805	707
Cataloging from OCLC records	262	538	323	406
Total	923 titles	1,326 titles	1,182 titles	1,207 titles

6.3.2 Staff Expenditures

Tables 6-11 and 6-12 present average monthly expenditures and times for those activities considered most liable to change due to OCLC. As can be easily discerned, OCLC-related costs in public libraries have increased, though not as dramatically as in academic libraries. Time devoted to OCLC activities decreased in the third period. Considering increased costs, this could imply more terminal use by professional librarians. Routine cataloging activities have remained relatively stable, increasing somewhat in the final interval. Original cataloging dropped slightly, however, Table 6-10 better portrays the decrease effected by OCLC. Card production in the public library is the most time and cost consuming activity.

Because of the high volume per title ratio and many receiving card catalogs unique to public libraries, special note should be taken of card production expenditures in Tables 6-11 and 6-12. Decreased costs of about $600 and 100 hours is particularly important given the substantial investments in this category. OCLC services would appear most responsible for these reductions.

Overall costs decreased by more than $500 per month while staff hours were decreased by 125 hours.

Table 6-11. Average monthly labor costs for selected activities -- public libraries

Type of Activity	Average labor costs per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
OCLC				
Terminal use	$ 541.08	$ 559.71	$ 690.69	$ 613.18
Error, duplicate record reporting,	2.89	21.71	13.67	15.57
Card distribution	70.77	181.02	128.45	142.74
Other	26.22	62.16	84.76	66.71
Routine cataloging				
Pre-catalog card/card copy routines	99.03	125.01	93.54	107.81
Routine cataloging	922.86	816.76	791.13	820.93
Original cataloging				
Original catloging	701.21	265.42	385.91	379.31
General				
Bibliographic searching	415.42	1,067.25	729.19	829.24
Shelf list	100.57	195.66	109.42	145.12
Revising	147.13	42.72	182.50	117.54
Card production	2,158.25	1,423.54	1,463.31	1,545.54
Prefiling (of catalog cards)	305.66	398.88	294.35	340.76
Total	$5,491.09	$5,159.84	$4,966.92	$5,124.45

Table 6-12. Average monthly staff times devoted to selected activities -- public libraries

Type of Activity	Average time per library			
	November	Dec. - Feb.	March - May	Combined (Nov.-May)
OCLC				
Terminal use	109.8 hrs.	120.0 hrs.	100.9 hrs.	110.4 hrs.
Error, duplicate record reporting,	.4	2.1	2.6	2.1
Card distribution	9.8	32.5	27.0	26.9
Other	4.3	16.1	16.0	14.4
Routine cataloging				
Pre-catalog card/card copy routines	30.2	33.6	30.8	31.9
Routine cataloging	132.4	124.3	140.2	132.3
Original cataloging				
Original catloging	71.9	39.9	67.5	56.3
General				
Bibliographic searching	152.2	206.1	103.7	154.5
Shelf list	15.1	30.2	18.1	22.9
Revising	21.1	7.0	24.7	16.6
Card production	500.0	424.3	390.7	420.7
Prefiling (of catalog cards)	92.0	162.0	91.8	121.9
Total	1,139.2 hrs.	1,198.1 hrs.	1,014.0 hrs.	1,110.9 hrs.

Table 6-13 presents average unit times witnessed in those activities under consideration. As may be expected few categories exhibit any substantial changes over the data collection months. Most notable decreases were experienced in bibliographic searching and original cataloging. Both of these observed changes may be attributed to OCLC services. The bulk of original cataloging thruput is tending to non-monographic materials. Both bibliographic searching and original cataloging unit times may reflect this changing characteristic. Often non-monographic materials require less descriptive data and hence, abbreviated bibliographic searching and original cataloging routines.

Table 6-13. Average unit staff times and costs for selected activities -- public libraries

Type of Activity	Average unit time			Average unit cost
	November	Dec. - Feb.	March - May	
LC/commercial card pre-cataloging routines	3.1 min.	3.3 min.	3.1 min.	$ .18
Routine cataloging	12.5	12.4	11.2	1.26
Original cataloging	21.9	15.8	16.3	2.12
Bibliographic searching	11.6	12.7	6.1	.78
Shelf list checking	1.2	1.9	1.1	.16
Revision	1.6	.4	1.5	.12
Card production (per card costs)	1.2	1.1	1.0	.07
Pre-filing	*	*	*	.01

*less than .1

7. DALLAS PUBLIC LIBRARY

7.1 Introduction

In order to compare OCLC with manual systems, the evaluation study required parallel operating systems (manual and OCLC). For numerous reasons maintenance of parallel systems proved infeasible for all participants with the exception of Dallas Public Library. Due to the concern of this library for gaining accurate data from both systems, great care was taken in dividing materials between the parallel systems for processing. Staffing is similar, or overlapping into both systems, supporting comparability. Therefore, with the exception of those materials unable to be processed through OCLC, fair comparisons may be partially drawn. Data concerning inputting of routine and original cataloging are suspect due to the limited volume observed.

Further, it should be made clear that these are figures for one example and in no way reject the comparative value of OCLC to other systems. Following is a compilation of data submitted during the seven months of collection.

In examining the differences between manual and OCLC costs and times, training factors associated with OCLC should be kept in mind. Initially, training for OCLC use as well as library processing was required for the two OCLC staff positions. Also, it should be noted that OCLC volume is entirely monographic while manual processing encompasses non-monographic materials as well. This causes some significant but immeasurable differences, most notable of which is a volume to title ratio of 8.7 in the manual system and 3.8 for OCLC.

7.2 Routine Cataloging

Perhaps the most comparable activity between OCLC and manual systems is that of routine cataloging with cards versus cataloging using OCLC records. Hence, this comparison is drawn in Tables 7-1 and 7-2. Card production time and cost necessitated by routine cataloging with cards would increase the 37 minutes and $3.00 presently spent by a factor related to the number of cards produced for the title. The "hit" charge would raise OCLC cost to $2.55, while card charges would further increase costs. However, without these additional factors, routine cataloging with cards exceeds OCLC cataloging by 22 minutes and $1.69. Two assumptions made in the calculation of OCLC times presented should be noted. First, if a record is found in the data base and, hence, cataloged from OCLC records, presumably bibliographic searching is eliminated from processing routines. This, of course, is not always the case, and may account for inflated times in OCLC input examined later. Secondly, it is assumed that revision is made at the terminal and included in the figure of 12.9 minutes. Hence, OCLC reported revision time is considered unique to input records. Again, this is not universally true.

Table 7-1. Average unit staff time for routine cataloging activities -- Dallas Public Library

Type of Activity	Average estimated time per title	
	Manual system (Nov. - May)	OCLC system (Nov. - May)
Bibliographic searching	19.1 minutes	0 minutes
Pre-cataloging card/ card copy routines	3.6	0
Routine cataloging	12.9	0
Cataloging at terminal	0	12.9
Shelf list checking	1.2	2.1
Revision	.2	0
Total	37.0 minutes	15.0 minutes

Table 7-2. Average unit labor cost for routine cataloging activities -- Dallas Public Library

Type of activity	Average estimated labor cost per title	
	Manual system (Nov. - May)	OCLC system (Nov. - May)
Bibliographic searching	$ 1.15	$ 0
Pre-cataloging card/ card copy routines	.18	0
Routine cataloging	1.51	0
Cataloging at terminal	[illegible]	1.11
Shelf list checking	.14	.20
Revision	.02	0
Total	$ 3.00	$ 1.31

7.3 Record Inputting

Inputting of records, though not a substantial part of OCLC volume, should be given some attention. As has been noted earlier, there are two types of input with which this report is concerned: LC cataloging input and contributed cataloging input. Table 7-3 displays the per title costs and times observed at Dallas Public for inputting LC copy. This is comparable to the manual system routine cataloging costs and times shown in Table 7-1 and 7-2.

It should be noted that unit time associated with OCLC non-terminal activities (e.g., bibliographic searching, original cataloging, etc.) are approaching those times of the manual system (as presented in Table 7-1). Thus, OCLC input would only be augmented above that of the manual system by inputting time and revisions, which may remain somewhat higher due to extra precautions and work form requirements of OCLC. Since input accounts for very little OCLC utilization, figures presented should not be viewed as extraordinarily alarming, as they do not account for a large volume of activity.

Bibliographic searching for OCLC input may be greater, given the fact that material not in the data base may have a higher probability of lacking cataloging information elsewhere.

Two omissions should be noted in these tables. First, figures do not include card costs as these are a function of the number of cards involved. Secondly, no time on LC card, card copy, or proof slip routines was reported for OCLC processing. It is clear, however, that this function should be uniform. Thus, presented totals may be lower than actual unless reported OCLC bibliographic searching actually overlapped pre-cataloging card routines. For purposes of comparison, OCLC system staff costs can be considered as $5.57 per input title.

Table 7-3. Average OCLC unit labor cost and time for routine cataloging input -- Dallas Public Library

Type of activity	Average per title	
	Time (Nov. - May)	Cost (Nov. - May)
Bibliographic searching	29.1 minutes	$ 2.41
Pre-cataloging card/ card copy routines	0	0
Routine cataloging	12.9	1.37
Shelf list checking	2.1	.20
Revision	1.8	.21
Inputting	16.0	1.38
Total	61.9 minutes	$ 5.57

Examining original cataloging, Tables 7-4 and 7-5 display times and costs for both the manual and OCLC systems. Because OCLC original cataloging data has been compiled for a limited volume, time and cost figures are not entirely reliable. However, figures given for manual system original cataloging might be assumed to more closely approximate original cataloging figures than those presented for OCLC. Again it should be noted that data does not cover card production and time costs.

Table 7-4. Average unit time for original cataloging -- Dallas Public Library

Type of activity	Average estimated time per title	
	Manual system (Nov. - May)	OCLC system (Nov. - May)
Bibliographic searching	19.1 minutes	29.1 minutes
Original cataloging	39.3	49.8
Shelf list checking	1.2	2.1
Revision	.2	1.8
Inputting	0	20.2
Total	59.8 minutes	103.0 minutes

Table 7-5. Average unit labor cost for original cataloging -- Dallas Public Library

Type of activity	Average estimated labor cost per title	
	Manual system (Nov. - May)	OCLC system (Nov. - May)
Bibliographic searching	$1.15	$ 2.41
Original cataloging	5.37	6.01
Shelf list checking	.14	.20
Revision	.02	.21
Inputting	0	1.74
Total	$6.68	$10.57

7.4 Card Costs

For Dallas Public Library, a large expenditure in per title costs is for card production. This is particularly emphasized by a high card per title ratio due to numerous branches and card catalogs. Tables 7-6 and 7-7 examine the times and costs involved in the production of a single card. OCLC per card costs are four cents, or one minute, less than corresponding costs in the manual system. When multiplied by the card per title ratio exhibited at Dallas Public, this becomes increasingly significant.

Table 7-6. Average card processing times -- Dallas Public Library

Type of activity	Average estimated time per card	
	Manual system (Nov. - May)	OCLC system (Nov. - May)
Card production	1.0 minutes	0 minutes
Prefiling	.3	.1
Card distribution	0	.2
Total	1.3 minutes	.3 minutes

Table 7-7 Average card processing costs -- Dallas Public Library

Type of activity	Average cost per card	
	Manual system (Nov. - May)	OCLC system (Nov. - May)
Card cost	$ .02	$ .03
Card production	.07	0
Prefiling	.01	.01
Card distribution	0	.02
Total	$ .10	$ .06

7.5 Comparative Costs

To compare OCLC and manual system costs at Dallas Public, total title costs, including card costs, should be considered.

Card costs are problematic given the card per title ratios reported in the two systems. Observed ratios were, for the OCLC system, 23 cards per title and, for the manual system, 44 cards per title. To avoid confusion in dealing with these ratios two approaches follow: title costs and volume costs. No correction is made in either approach for varying card ratios.

Table 7-8 and 7-9 present observed per title costs including card costs by system and process as derived from data presented in the previous sections. Since manual system costs and times include expenditures for 44 cards and about 8.7 volumes, while that of the OCLC system represent costs on 23 cards and 3.8 volumes, the most notable differentials are seen in card production and cost statistics.

While manual system card expenditures include 57.2 minutes, or $4.44, on card routines, OCLC costs include only 6.9 minutes or $1.38. A total cost of $7.44 and $11.36 for manual routine and original cataloging respectively, is far more than the $3.93 figure noted in OCLC routine cataloging. Input figures for OCLC are $6.95 and $11.95 for routine and original cataloging, respectively. Time per title estimates do not reflect these higher figures, though, primarily due to the card production time necessary for manual system operations.

Table 7-8. Comparative per title staff time -- Dallas Public Library

Type of activity	Manual system		OCLC system		
				Input	
	Routine	Original	Routine	Routine	Original
Cataloging	37.0 minutes	59.8 minutes	15 minutes	61.9 minutes	103.0 minutes
Card routines	57.2	57.2	6.9	6.9	6.9
Total	94.2 minutes	117.0 minutes	21.9 minutes	66.8 minutes	109.9 minutes

Table 7-9. Comparative per title labor and card cost -- Dallas Public Library

Type of cost	Manual system		OCLC system		
				Input	
	Routine	Original	Routine	Routine	Original
Labor	$3.00	$ 6.92	$1.31	$5.57	$10.57
Card costs	4.44	4.44	1.38	1.38	1.38
Hit charge	0	0	1.24	0	0
Total	$7.44	$11.36	$3.93	$6.95	$11.95

In order to give a more equitable comparison of the parallel systems at Dallas Public, especially as regards the card production costs, Tables 7-10 and 7-11 show the title cataloging costs spread over the volumes represented. For the OCLC system 3.8 volumes per title, and six cards per volume ratios were observed. In the manual system 8.7 volumes per title and five cards per volume ratios were reported. The following tables present, then, the initial cataloging costs extended over the first and average successive volumes.

On a per volume basis, routine cataloging with cards or card copy in the manual system, at 10.9 minutes, remains 5.2 minutes above that of cataloging from OCLC records. Nevertheless, OCLC cataloging cost is about $.20 per volume above that of manual routine cataloging. Input costs and times are substantially above that of manual routine and original cataloging figures.

Table 7-10. Comparative per title staff time dispersed over first and successive volumes -- Dallas Public Library

Type of activity	Manual system		OCLC system		
				Input	
	Routine	Original	Routine	Routine	Original
Cataloging	4.3 minutes	6.9 minutes	3.9 minutes	16.3 minutes	27.1 minutes
Card routines	6.6	6.6	1.8	1.8	1.8
Total	10.9 minutes	13.5 minutes	5.7 minutes	18.1 minutes	28.9 minutes

Table 7-11. Comparative per title costs dispersed over first and successive volumes -- Dallas Public Library

Type of cost	Manual system		OCLC system		
				Input	
	Routine	Original	Routine	Routine	Original
Labor	$.34	$ .80	$ .35	$1.46	$2.78
Card costs	.51	.51	.36	.36	.36
Hit charge	0	0	.34	0	0
Total	$.85	$1.31	$1.05	$1.32	$3.14

Many difficulties arise using the preceding approaches. Comparison is faulty due to the varying emphases within each system on the particular processes (i.e., routine and original cataloging). For this reason, the following presents estimates based on 10,000 titles and volumes thruput, with appropriate emphasis on each process. Before discussion of these findings, attention should be given to Table 7-12. This table gives the thruput assumed in each process for the following tables.

Routine cataloging input under the OCLC system may be somewhat exaggerated beyond the true ratio at Dallas Public, due to inadequacies in data concerning this process. Figures are, however, consistent with unit estimates used earlier.

Further note should be made of the varying process ratios between volumes and titles. This is a somewhat different approach than has been employed previously. Here, the basic premise is that original cataloging is performed only on the first volume received, while successive volumes are processed routinely. Thus, for the manual system original cataloging, volume is considered to have a one to one ratio with titles. In the OCLC system the same assumption -- that input is required only for the first received volume -- is made. Successive volumes are considered as part of the routine cataloging with OCLC records thruput.

Table 7-12. Assumed thruput by process for presented data based on 10,000 title and volume estimates

Type of process	Titles		Volumes	
	Manual system	OCLC system	Manual system	OCLC system
Original cataloging	771 titles	502 titles	212 volumes	138 volumes
Routine cataloging with cards	9,229	1,903	9,788	523
Routine cataloging from OCLC records	0	7,595	0	9,339
Total	10,000 titles	10,000 titles	10,000 volumes	10,000 volumes

Using this comparative data to predict total cataloging costs and staff expenditures as they relate to the particular activities examined at Dallas Public, Tables 7-13 and 7-14 present estimates on 10,000 titles thruput in each system. These are derived from data presented earlier as well as processing volume (as presented in Table 7-12). It should be kept in mind that manual system costs include a far higher volume and thus card thruput, than that of the OCLC system. Specifically, the manual system costs and times represent 86,593 volumes and 443,651 cards; the OCLC system, 36,419 volumes and 226,851 cards.

Thus, with these differentials there is an observed difference between manual and OCLC total costs of $26,136.47, or $2.61 per title,with manual costs the greater ones. Much of this difference is caused by card production, bibliographic searching and routine cataloging costs. Notable similarities in costs of the two systems exist in original cataloging, shelf list checking and card costs.

The staff time devoted to these selected activities, as presented in Table 7-14, reflects much of the same pattern as the cost comparison. For the manual system the average time required per title is 88.3 minutes while the comparative time for OCLC is about 38.3 minutes -- a 50 minute per title or an 8321 hour for 10,000 titles difference.

Table 7-13. Estimated selected costs per 10,000 titles activities -- Dallas Public Library

Type of cost	Estimated costs per 10,000 title	
	Manual system (Nov. - May)	OCLC system (Nov. - May)
Routine cataloging		
Pre-catalog card/card copy routines	$ 1,689.83	$ 0
Routine cataloging	13,970.71	2,620.92
Input	0	2,634.07
Original cataloging		
Original cataloging	4,139.36	3,019.98
Input	0	875.78
Routine cataloging from OCLC records		
Terminal use	0	8,447.86
General		
Bibliographic searching	11,629.43	5,805.11
Shelf list checking	1,333.74	2,035.20
Revising	186.04	505.81
Card production	28,613.70	0
Card distribution	0	6,217.60
Prefiling (of catalog cards)	4,766.52	1,396.73
Other Costs		
Hit charges	0	9,417.80
Card costs	10,497.96	7,712.96
Total	$76,827.29	$50,690.82

Table 7-14. Estimated labor time per 10,000 titles for selected activities -- Dallas Public Library

Type of activity	Estimated time per 10,000 titles	
	Manual system (Nov. - May)	OCLC system (Nov. - May)
Routine cataloging		
Pre-catalog card/card copy routines	555.6 hours	0 hours
Routine cataloging	1990.0	410.3
Input	0	509.0
Original cataloging		
Original cataloging	505.2	416.4
Input	0	169.2
Routine cataloging from OCLC records		
Terminal use	0	1632.6
General		
Bibliographic searching	3179.4	1166.4
Shelf list checking	188.4	352.0
Revising	25.7	71.9
Card production	6665.7	0
Card distribution	0	1304.0
Prefiling (of catalog cards)	1607.0	364.5
Total	14717.0 hours	6396.3 hours

Refining this comparison further, Tables 7-15 and 7-16 present estimated costs and times for 10,000 volumes thruput in each system. Here differentials for varying card and volume per title ratios are somewhat corrected. For reference, Table 7-12 denotes the specific volume figures used in these tables. Cards represented by each system are 51,234 for manual and 59,160 for OCLC. This differential should be considered in weighing comparative card costs. Further, it should be noted that OCLC costs include a cost of $2,465.12 for hit charges (representing an assumed 1988 hits). Per volume overall costs as displayed in Table 7-16 become $.92 for manual and $1.41 for OCLC processing. Much of this cost differential is due to hit costs and terminal use. Per volume time differences actually favor OCLC, having a 10 minute average as compared to a 10.6 minute average observed in the manual system.

Table 7-15. Estimated selected costs per 10,000 volumes -- Dallas Public Library

Type of cost	Estimated costs per 10,000 volumes	
	Manual system (Nov. - May)	OCLC system (Nov. - May)
Routine cataloging		
Pre-catalog card copy routines	$ 181.72	$ .00
Routine cataloging	1,502.33	720.31
Input	.00	724.00
Original cataloging		
Original cataloging	1,138.19	830.19
Input	.00	240.70
Routine cataloging from OCLC records		
Terminal use	.00	1,886.10
General		
Bibliographic searching	1,342.99	1,595.50
Shelf list checking	154.02	830.02
Revising	21.48	720.34
Card production	3,304.38	.00
Card distribution	.00	1,707.24
Prefiling (of catalog cards)	550.45	383.52
Other Costs		
Hit charges	.00	2,465.12
Card costs	1,024.68	2,011.42
Total	$ 9,220.24	$14,114.46

Table 7-16. Estimated staff time per 10,000 volumes for selected activities -- Dallas Public Library

Type of activity	Estimated time per 10,000 volumes	
	Manual system (Nov. - May)	OCLC system (Nov. - May)
Routine cataloging		
Pre-catalog card copy routines	59.8 hours	0 hours
Routine cataloging	214.0	112.8
Input	0	139.9
Original cataloging		
Original cataloging	138.9	114.5
Input	0	46.5
Routine cataloging from OCLC records		
Terminal use	0	364.5
General		
Bibliographic searching	367.2	320.6
Shelf list checking	21.8	21.7
Revising	3.0	19.8
Card production	769.7	0
Card distribution	0	358.0
Prefiling (of catalog cards)	185.6	100.1
Total	1760.0 hours	1668.4 hours

8. IRVING INDEPENDENT SCHOOL DISTRICT

The school district library system represents three high school libraries and an instructional center. The instructional center is responsible for processing materials of elementary and junior high schools, as well as maintaining the district's educational library. Since major acquisitions for the schools arrive in August, only limited processing data could be gathered. In order to collect further information, terminal operations relating to school processing were monitored through July.

As indicated in Table 8-1, terminal use devoted to school processing averaged 3 hours per day from January through July. Approximately 28 records were searched daily as shown in Table 8-2. Averages presented were taken only over those days of observed use. The primary purpose was routine cataloging. Forty-seven instances of input were observed representing two percent of all records used, and one percent of utilized time.

It should be noted that the school district shares the terminal with the Irving Public Library. Thus, time and record utilization accounts for only a portion of Irving's terminal use.

Table 8-3 illustrates the "find" ratios as reported in Irving School terminal log sheets. The overall average of 89% for the simple "find" ratio is considerably higher than that found in the public libraries (see Table 6-4). Since there were no rejections noted during the study, refinement of the find ratio is only necessary for holds. Hence, by deleting holds from search and find totals, an overall average of 88 percent was

noted for the adjusted "find" ratio. As is easily discerned, the holding rate has declined significantly since February.

Eighty-nine percent (ninety-nine percent when holds are excluded) of all cataloging records produced were revised as shown in Table 8-4. Further revision was made upon the receipt of cards, according to month-end data. Manual production of replacement cards was occasionally required.

Examining November 1973 through April 1974 (the same months for which data were received this year), 577 monographs were processed by the instructional center. This year, 417 monographs were processed of which 394 were new titles. However, only 234 monographs were cataloged at the center. It is assumed that the remaining 160 went uncataloged or were processed by the OCLC unit of the Irving Public Library. The majority (435 items) of receipts were actually non-monographic. For this reason, much of OCLC's value lies in its ability to release staff time for processing the growing media collection.

Perhaps most significant, this pilot project has acted as a catalyst for other joint endeavors of the school district and public library in Irving. This cooperation has fostered an open exchange between school and library personnel, including educational and orientation sessions. More recently, and of perhaps most value, is the development of a union catalog which incorporates both library and school district holdings.

Table 8-1. Average daily time at terminal by type of use -- Irving Independent School District

Type of Use	Average daily time at terminal			
	Feb.-March (31 days)	April-May (32 days)	June-July (27 days)	Combined (Feb.-July)
Cataloging from OCLC records	157 min.	150 min.	231 min.	179 min.
Input - Routine cataloging	6	*	0	2
Input-Original cataloging	1	0	0	*
Order department	0	4	0	1
Interlibrary loan use	1	2	0	1
Other	3	2	0	2
Total	168 min.	158 min.	231 min.	181 min.

*less than 1.

Table 8-2. Average daily volume processes at terminal by type of use -- Irving Independent School District

Type of Use	Average daily time at terminal			
	Feb.-March (31 days)	April-May (32 days)	June-July (27 days)	Combined (Feb.-July)
Cataloging from OCLC records	26 items	23 items	35 items	28 items
Input - Routine cataloging	*	1	0	*
Input-Original cataloging	*	1	0	*
Order department	0	2	0	*
Interlibrary loan use	*	*	0	*
Total	27 items	27 items	35 items	28 items

*less than 1.

Table 8-3. "Find" ratios for routine cataloging using OCLC records -- Irving Independent School District

Dates	Simple "find" ratio	Adjusted "find" ratio
Feb. - March (766 searches)	91%	88%
April - May (698 searches)	83	82
June - July (889 searches)	92	92
Feb. - July	89%	88%

Table 8-4. Index of disposition of OCLC records found in data base -- Irving Independent School District

Dates	Category of disposition						
		Revised					
	Accepted	Classification and major	Other	Held	Rejected	Unreported	Total
Feb. - March (699 records)	.00	.06	.70	.24	.00	.00	1.00
April - May (578 records)	.00	.03	.89	.06	.00	.02	1.00
June - July (822 records)	.00	.09	.90	.01	.00	.00	1.00
Feb. - July (2099 records)	.00	.06	.83	.10	.00	.01	1.00

APPENDIX A

METHODOLOGY

A.1 Introduction and Study Design

Initial stages of this study were devoted to background research, data collection design and study planning. Background questionnaires and preliminary data collection forms were developed during August 1974. In September, the background questionnaires and preliminary data collection forms were issued to each of the participating libraries. At the same time, proposed data collection forms were reviewed by members of the Evaluation Committee, and were revised accordingly. After an introductory meeting of library representatives held in October, data collection officially began on November 1, 1974, and continued for seven months ending May 31, 1975. An interim report with initial compilations of data was issued on February 1, 1975. This report was primarily a summary of preliminary data provided by public libraries, with some generalized results as well.

Selected site visits were conducted during December, January, April and May. These visits were to supply operational data otherwise unavailable. For a more complete description of these visits see Appendix D.

In order to arrive at representative cost, volume and time estimates, care was taken to design a sampling rule for the different types of data collection. Due to budget and time constraints, minimum sample sizes that would produce useful cost, volume and time estimates for each type

of library were desired. Two types of sampling were performed: sampling during data collection and sampling during analysis. The purpose of double sampling was to yield enough data for analysis of special topics and yet to reduce the amount of data to be handled in the standard analysis.

A.2 Data Collection

Four background questionnaires given participating libraries in October covered the general library, cataloging, ordering and interlibrary loan departments (see attachment A). Twenty-four of the 25 participants completed and returned these questionnaires. Primarily, information requested related to volume, operations and costs, as well as organizational structure, procedures and collections. This information was to be a basis for profiles (Appendix A) and comparisons and to provide salary information necessary for the cost sections of this report. It should be noted that all salary and cost information provided in these questionnaires was considered confidential unless explicitly released by the participating institution.

The OCLC Terminal Log Sheet (Form #1) was kept continuously for the seven month collection period. This was considered the major and most essential data collection instrument. Each operator was to record for the various types of terminal use (i.e., cataloging, input, updates, order department use, ILL use, training, demonstration and other), the number of items searched and the elapsed time. For cataloging searches, the number of records found and their disposition (i.e., accept, revise, reject and hold) were recorded. Revision of cataloging records was divided into two categories of disposition: major or classification revisions and other more minor revisions.

Also to be noted were cataloging book form (Form #2) numbers when received at the terminal. In order to capture all tagged items (i.e., with cataloging book forms) continuous collection of the terminal log sheet was essential. Beyond this, sampling at the local level was believed to bias data by encouraging greater terminal utilization on days sampled than would otherwise be the norm. Also, the complex sampling procedures employed in collecting other forms were sufficiently involved without further requirements.

For analysis purposes, 25 days (out of approximately 145 working days in the study period) were sampled. This was accomplished by dividing the sample period into five groups of weeks, and then randomly selecting one Monday, Tuesday, Wednesday, Thursday, and Friday from each group of weeks. When a day in a given week was chosen, the entire week was excluded from further consideration. The sampled days are presented in Table A-1. As indicated, they are equally distributed among the five days of the working week. This sample, then, forms five successive intervals, or "weeks," within the study, enabling identification of changing patterns, trends or a learning curve over the seven month period.

Table A-1. Analysis sample of OCLC log sheets

Period	Day of week represented				
	Monday	Tuesday	Wednesday	Thursday	Friday
Period 1	November 11	December 3	November 6	November 21	November 27*
Period 2	January 20	December 31	January 8	January 16	December 20
Period 3	February 24	February 18	February 5	February 13	January 31
Period 4	April 7	April 15	March 9	April 3	March 14
Period 5	May 12	April 22	April 30	May 8	May 23

* November 27 was substituted for Friday due to the November 29 holiday.

All transactions were evaluated for the 25 days. From this data the following averages were developed on a per terminal basis:

- Daily terminal time utilized;
- Daily terminal time utilized by activity;
- Number of records searched daily by type of use;
- Daily terminal down time; and
- Daily unutilized terminal time.

These calculations were based on the number of reports received, including those terminals reporting no use. For those terminals in use on sampled days the following sampling interval averages were calculated:

- Percent of time devoted to each type of use;
- Percent of records searched by type of use; and
- Time spent on searching a record by types of use.

For routine cataloging from OCLC records the following averages were calculated for records searched:

- Find ratios;
- Disposition (i.e., accept, revise, reject, hold) percentages;
- Time by records found; and
- Time by records produced.

The Cataloging Book Form (Form #2) was placed in a sample of materials to be cataloged. During three one-week intervals beginning November 11, January 20, and April 5, every tenth or twentieth item (according to Table A-2) was tagged upon receipt. Each form was consecutively numbered and information on type of material, language, subject and date of publication as well as dates of book receipt and card receipt was recorded. For all items searched on the OCLC data base, the book form number was noted on the OCLC terminal log sheet (Form #1). In this manner, processing times from receipt to terminal and terminal to card receipt could be easily discerned.

For analysis, every other form (even-numbered book forms) was scrutinized for processing times and find ratios in the OCLC data base. Data received from institutions with sampling intervals of 1/20 were weighted by two. Sampled items were evaluated for the following elements:

- Find rates by subject and date of publication;
- Find rates by sample week and type of institution;
- Average time per item from receipt to first search of OCLC data base; and
- Average time per item from production of cards to card receipt.

Table A-2. Sampling intervals for data collection of cataloging book form and order searches.

Institution	Sampling interval	
	1/10	1/20
The University of Texas at Austin		x
East Texas State University		x
North Texas State University		x
Southern Methodist University		x
Texas Tech University		x
University of New Mexico		x
Dallas Public Library		x
Austin College	x	
Baylor University	x	
Bishop College	x	
Dallas Baptist College	x	
Eastern New Mexico University	x	
Fort Worth Public Library	x	
Irving Public Library	x	
Irving Independent School District	x	
New Mexico State University	x	
Texas State Library	x	
Texas Christian University	x	
Texas Woman's University	x	
University of Dallas	x	
The University of Texas at Arlington	x	
The University of Texas at Dallas	x	

Cataloging Activity Time Sheet (Form 3): This form was developed from that used in the Colorado Academic Libraries Book Processing Feasibility Study and the Cost Study of Specific Technical Processing Activities of the California State Universities and Colleges Libraries. Data was collected on all cataloging activities performed within the cataloging department. Basically, these were grouped into six separate functions:

- Pre-cataloging;
- Cataloging;
- OCLC;
- Catalog card processing;
- Final processing; and
- Non-cataloging activities.

A total of 23 specific activities and six miscellaneous, or other, categories are represented (see Attachment A).

These forms were kept for the entire month of November and one week per month for the remaining six months of data collection. Table A-3 presents the dates of this collection sample.

Table A-3. Data collection Sampling Scheme for Forms #3, #6 and #9.

Dates of Collection	Weeks of month represented
November 1-30	All
December 9-16	Second
January 20-27	Third
February 24- March 2	Fourth
March 3-10	First
April 7-14	Second
May 19-26	Third

For analysis, activities considered were:

- Searching and verifying bibliographic information (Task 2);
- Ordering, receiving, arranging and matching cards, proof slips or card copy (Task 4);
- Original cataloging (Task 7);
- Routine cataloging (Task 8);
- Routine cataloging with non-OCLC automated systems (Task 9);
- Shelf list checking (Task 10);
- Revision (Task 11);
- Use of OCLC terminal (Task 13);
- Notifying OCLC of corrections, revisions, updates, etc. (Task 14);
- Checking and distributing cards received from OCLC (Task 15);
- Other OCLC activities (Task 16);
- Manual production/reproduction of catalog cards (Task 17); and
- Prefiling of catalog, shelf list or authority cards (Task 19).

For each of these activities, total times and labor costs were derived. Salary information used was provided by the cataloging department background questionnaires. To these figures were added fringe benefits paid by the institution or State beyond direct wages. In instances where salary

information was not available, salaries of employees in comparable institutions and like positions were substituted. In order to derive unit costs and times, data from sampled weeks were incremented by a factor of n/5, where n represents the number of working days in the month of sample weeks. This data was then combined with data provided from month-end statistics (Form #4) to yield unit costs and unit times.

Cataloging Month-end Data (Form #4) was kept on a regular monthly basis throughout the study. Volume statistics provided were:

- Added copies/added volumes
- New titles
- New editions, revisions, etc.

In order to discern cataloging workload, title statistics were also required for the following types of cataloging:

- Routine with cards,
- Original, and
- Non-OCLC automated.

It should be noted that titles input to OCLC would also be included in these statistics. Also requested were card statistics produced from the following:

- Manually,
- Via non-OCLC automated system, and
- Commercial services

These were segmented into catalog, shelf list and authority cards.

Form #4 was necessary to develop average unit costs and unit times represented by information in the activity sheets. This was done primarily by estimating what materials were routed through selected activities (e.g., all items originally cataloged went through Task 7). Total times and cost of selected activities were then averaged over this thruput. Table A-4 presents assumptions made for estimated thruput.

Also noted on month-end forms were changes in salaries, staffing or procedures which might effect analysis.

Interlibrary Loan Request Tally Sheets (Form #5) were kept at two week intervals beginning November 11, January 20 and April 5. The date of request and date of response from a queried institution were noted for each monographic request made by the reporting institution. Also kept for each request were language, subject and date of publication. Location and bibliographic sources searched (including OCLC) were noted as was the outcome of each search. All requests were analyzed to yield the following information:

- Find ratios for bibliographic tools by date and subject of publication;
- Duration to response by location of institution queried; and
- Fill rates by location of instituion queried.

Table A-4. Assumptions for discerning estimated thruput

Task	Estimated thruput
2. Bibliographic searching	All titles except titles cataloged from OCLC records
4. Card, proof slip, card copy routines	Titles cataloged routinely with cards or card copy
7. Original cataloging	Titles cataloged originally
8. Routine cataloging	Titles cataloged routinely with cards or card copy
9. Shelf list checking	All titles
10. Revision	All titles except titles cataloged from OCLC records
13. OCLC terminal use	Not applicable
14. Notifying OCLC of corrections, etc.	Not applicable
15. Checking and distributing cards received from OCLC	All OCLC produced cards
16. Other OCLC activities	Not applicable
17. Manual production/ reproduction of cards	All manually produced cards
19. Prefiling of cards	All non-OCLC cards

Interlibrary Loan Searching Activity Sheets (Form #6) were used throughout November and one week a month for the remaining six months of data collection (see Table A-3. Time was noted for bibliographic and location source searches conducted on ILL borrowing requests. All data were analyzed to yield average times and cost per search. Essentially the same formula employed in analysis of Form #3 was used for Form #6. During sampled weeks monthly time and cost were extrapolated by multiplying observed weekly times and costs by a factor of n/5 where n is the number of working days in the particular month. This was then averaged over searches made as provided in month-end data (Form #7).

Interlibrary Loan Month-end Data (Form #7) were kept on a regular monthly basis. Form #7 monitored borrowing requests received as well as filled, unfilled and in-process requests. Data were used to estimate average time and costs (from Form #6) per search. Also noted were changes in staffing procedures or costs which might affect analysis.

Order Department Pre- and Post-Order Searching Tally Sheets (Form #8) were kept for three one-week periods beginning November 11, January 20 and April 5. Every tenth or twentieth order request (according to the scheme presented in Table A-2) was sampled. For each sampled search, bibliographic tools searched and outcomes of those searches were noted. Also subject, language and date of publication were requested. Notation of order cancellations was made in order to discern any influences of OCLC on ordering patterns. All transactions were analyzed. Data from institutions with 1/20 intervals were weighted by two. Basically, analysis of this form was similar to that of Form #5. Data computations yielded find ratios for bibliographic tools by subject and date of publication.

Order Department Pre- and Post-Order Searching Time Sheet (Form #9) gathered information on searching time. This form was kept throughout November and one week in each of the following months of data collection (see Table A-3). All sheets were considered in analysis. Average searching times and cost were derived by extrapolating weekly time data to a monthly estimate and averaging over total searches as indicated in month-end data (Form #10).

Order Department Month-end Data (Form #10) was kept on a regular basis throughout data collection. Data provided included volume of order requests, number of searches and procedural, staffing and salary changes. Month-end figures were employed in calculating average searching time and cost per request.

Table B-1. Library profiles (page 1 of 2)

Type of library	Holdings		Library FTE Oct. 1974	Cataloging department											
				Volumes processed ◇			Titles cataloged ○			Departmental FTE			Backlog (entitles unless otherwise specified)		
	Volumes	Titles		1973-1974	1974-1975	Difference*	1973-1974	1974-1975	Difference*	Pre-OCLC	Last report	Difference	First report	Last report	Percentage difference
Public															
Dallas Public Library	1,371,109	–	406.0	143,521	159,216	+15,695	16,228	23,047	+6,818	28.6	31.1	+2.5	7,613	3,800	-50%
Fort Worth Public Library	693,311	285,052	144.2	45,480	55,140	+ 9,660	10,546	17,432	+6,886	15	18	+3.0	0	0	0
Irving Public Library	90,159	70,607	24.0	13,949	10,370	- 3,579	12,390	9,612	-2,778	4.9	6.9	+2.0	535	101	-81%
Texas State Library	322,131	–	145.0	5,644	8,085	+ 2,441	3,734	5,043	+1,309	4.0	3.3	- .7	21'	7'	-67%
Academic															
Small															
Austin College	109,369	86,401	9.5	5,362	5,105	- 257	5,017	4,826	- 191	2.5	2.3	- .2	86	–	–
Bishop College	140,000[1]	100,000[1]	–	3,098	–	–	2,016	–	–	–	–	–	–	–	–
Dallas Baptist College	166,992	53,904	10.0*	3,138	4,068	+ 930	2,869	3,048	179	2.0	1.8	- .2	90'	18 t	–
Texas Women's University				13,810	24,063	+10,258	7,353	17,264	+9,911	4.8	4.4	- .4	498	345	-31%
University of Dallas	104,719	–	8.25	7,594	5,712	- 1,882	–	3,694	–	4.8	5.9	+1.1	107	30	-72%
University of Texas at Dallas	199,284	–	22*	8,697	36,936	+28,239	7,514	10,136	+2,622	5.5	5.0	- .5	2,070'	1,657'	-20%
Eastern New Mexico University	139,726	112,978	–	7,344	13,464	+ 6,100	5,660	–	–	5.5	5.5		3,500	4,750	+36%
Middle															
Baylor University	–	–	45	25,537	23,796	- 1,741	20,993	18,077	-2,916	17.5	17.5		137'	107'8''	-21%
East Texas University	622,256	329,268	18.5*	19,497	21,338	+ 1,814	15,474	15,672	+ 198	18.5	16.5	-2.0	542	315	-42%
Southern Methodist University	575,714[2]	–	54.8*	15,970	20,767	+ 4,797	12,233	14,417	+2,184	13.7	13.7	0	1,336	1,753	+31%
Texas Christian University	809,739	660,000	17*	18,921	18,461	- 406	14,274	16,286	+2,012	11.2	11.5	+ .3	1,211	989	-18%
University of Texas at Arlington	548,356	332,038	59*	21,732	16,791	- 4,941	9,815	9,525	- 290	16.3	15.5	- .8	3,881	2,897	-25%
Large															
North Texas State University	817,630	–	91	37,893	40,260	+13,791	13,791	18,870	+5,078	23.5	18.8	-4.7	2,066	2,484	+20%
Texas Tech University	1,109,920	–	119.5	34,987	28,206	- 4,493	20,050	20,055	+ 5	14.6	17.4	+2.8	130 s	80 s	-38%
University of Texas at Austin	–	–	–	–	101,880	–	–	74,864	–	–	–	–	–	–	–
New Mexico State University	385,749	139,786	74.5	34,138	41,998	+ 7,860	21,779	28,985	+7,206	20.2	19.6	- .6	8,000	8,700	+ 9%
University of New Mexico	733,650	467,973	134*	48,765	44,739	- 4,026	27,414	31,332	+3,918	24.0	–	–	–	–	–

– No data

* Regular employees only - excludes student assistants

[1] As of April 1975

[2] Excludes law and theology

◇ monographs and serials only

t Titles

s Shelves

Current year data is interpolated from seven months of data collection

Table B-1. Library profiles (page 2 of 2)

Type of library	Order department						Interlibrary loan department					
	Order requests (monographs)			Departmental FTE			Borrowing requests (monographs)			Departmental FTE		
	1973-1974	1974-1975	Difference*	Pre-OCLC	Last Report	Difference	1973-1974	1974-1975*	Difference	Pre-OCLC	Last Report	Difference
Public												
Dallas Public Library	65,459	–	–	15	–	–	5,938	–	–	4.0	2.0	- 2.0
Fort Worth Public Library	26,020**	–	–	4.0	–	–	5,626	804	-4,822	2.0	2.0	0
Irving Public Library	4,443	4,090	- 353	1.0	1.0	0	279	662	+ 383	2.0	2.0	0
Texas State Library	–	2,709	–	2.0	2.0	0	8,040	10,667	+2,626	6.5	6.5	0
Academic												
Small												
Austin College	5,315**	2,839	- 2,476	1.3	1.3	0	644 t	303	- 341	.4	.5	+.1
Bishop College	–	–	–	–	–	–	–	–	–	–	–	–
Dallas Baptist College	3,138**	–	–	–	–	–	5 **	31	+ 26	*	*	–
Texas Women's University	–	–	–	5.5	–	–	453	414	- 39	1.9	1.9	0
University of Dallas	2,440	1,106	- 1,334	2.2	1.7	- .5	569	944	+ 375	.5	.5	0
University of Texas at Dallas	6,482	2,409	- 4,073	3.5	3.5	0	2,554**	2,344**	- 210	.5	.5	0
Eastern New Mexico University	–	–	–	–	–	–	208	*	*	1.4	*	*
Middle												
Baylor University	11,961	21,837	+ 9,876	7.0	8.0	+1.0	–	–	–	–	–	–
East Texas University	21,141	–	–	1.4	–	–	893	680	- 213	1.4	1.4	0
Southern Methodist University	11,183**	9,895**	- 1,288	6.3	7.5	1.2	1,170	946	- 224	2.3	2.3	0
Texas Christian University	17,527	30,531	+13,004	9.5	7.5	-2.0	444	399	- 45	1.6	1.9	+.3
University of Texas at Arlington	7,692	8,079	+ 387	11.2	9.1	-2.1	2,911	1,409	-1,502	2.0	2.0	0
Large												
North Texas State University	–	12,345	–	16.0	16.0	0	970	1,008	+ 38	3.5	3.4	-.1
Texas Tech University	–	11,521	–	13.0	12.5	- .5	3,174**	4,670**	+1,496	4.0	4.0	0
University of Texas at Austin	–	–	–	–	–	–	–	–	–	–	–	–
New Mexico State University	10,676	31,562	+20,886	13.8	13.8	0	769	948	+ 179	1.5	–	–
University of New Mexico	37,923**	18,338**	-19,585	10.0	10.0	0	4,744**	4,260**	- 484	2.0	2.0	0

– No data

* Regular employees only -- excludes student assistants

** All requests included

Table C-1. Terminal log sheet summary data - Texas (page 1 of 2)

Sample day	Number of terminals reporting*	Type 1 Use								Type 2 Use			
		Number of items	Time	Items found	Items rejected	Items held	Items accepted	Items revised		Number of items	Time	Items found	Items held
								C	O				
11/6	22 (21)	1,192	5,757	937	12	153	398	104	241	61	702	0	2
11/11	22	1,379	6,231	1,034	4	192	392	120	245	44	537	0	0
11/21	23	1,150	5,950	923	8	174	364	156	212	59	813	0	4
11/27	23 (22)	1,311	5,290	914	3	190	342	126	201	88	1,137	3	60
12/3	24	1,625	7,055	1,204	2	263	488	164	177	34	427	4	11
12/20	20	1,315	4,181	881	3	180	326	131	143	52	651	2	23
12/31	22 (18)	1,191	4,129	894	7	119	333	224	177	34	211	0	3
1/8	23 (22)	1,253	5,430	947	7	171	496	133	124	75	942	0	41
1/16	24	1,090	5,656	832	14	176	311	161	138	71	1,445	3	26
1/20	23	1,769	6,917	1,140	11	187	465	252	217	44	693	0	21
1/31	25	1,349	5,690	1,018	5	254	407	164	130	36	616	1	15
2/5	24	1,029	5,231	828	2	181	316	181	131	34	415	9	9
2/13	24 (23)	1,265	6,078	953	2	171	383	219	155	124	716	22	36
2/18	25	1,179	5,566	887	26	173	354	202	128	136	1,320	4	12
2/24	24	1,452	7,138	1,145	6	254	499	193	165	51	742	0	13
3/14	23	1,530	5,766	1,029	9	217	393	176	216	93	697	39	23
3/19	24	1,457	6,008	1,114	5	210	461	206	208	77	750	46	9
4/3	23	909	4,089	685	4	148	184	114	170	100	708	18	21
4/7	24	1,756	7,166	1,328	29	293	514	179	245	67	939	39	31
4/15	25 (24)	1,189	5,483	967	33	199	261	239	233	140	1,696	7	31
4/22	25 (24)	1,365	5,610	962	5	308	277	161	188	214	1,327	19	22
4/30	24	1,150	5,664	837	0	180	247	146	202	92	972	33	28
5/8	20 (16)	147	737	100	0	5	5	40	13	5	155	2	2
5/12	21	1,613	5,141	1,029	9	271	411	178	156	99	1,314	2	39
5/23	17	1,003	4,117	687	5	144	275	181	38	48	522	1	5
Totals by Week													
1	114 (112)	6,657	30,283	5,012	29	972	1,984	670	1,076	286	3,616	7	77
2	112 (107)	6,617	26,313	4,694	42	833	1,955	902	809	376	3,942	5	114
3	122 (121)	6,274	29,703	4,831	41	1,033	1,959	959	709	361	3,809	36	85
4	119 (118)	6,841	28,512	5,123	80	1,009	1,871	914	1,072	477	4,790	149	115
5	107 (102)	5,278	21,269	3,615	19	908	1,215	705	607	458	4,290	57	96
Total	574 (560)	31,677	130,080	23,275	211	4,755	8,989	4,150	4,264	1,878	20,447	254	487

* Number in parenthesis represent number of terminals in use

Table C-1. Terminal log sheet summary data - Texas (page 2 of 2)

Sample day	Type 3 Use				Type 4 Use		Type 5 Use		Type 6 Use		Types 7,8,9 Use			
	Number of items	Time	Items found	Items held	Number of items	Time	Number of items	Time	Number of items	Time	Time	Total number of items	Total time used	Down time
11/6	31	420	0	2	45	225	530	979	49	136	841			479
11/11	24	318	5	0	13	85	426	746	55	140	395			1,840
11/21	52	736	0	16	196	286	454	447	50	87	672			0
11/27	42	508	1	11	12	25	272	582	6	13	110			55
12/3	43	595	3	21	54	386	337	798	9	24	3[illegible]			[illegible]
12/20	29	302	0	12	47	105	327	625	2	12	115			0
12/31	22	375	2	4	104	215	130	262	29	42	139			154
1/8	75	695	13	15	181	564	319	713	76	200	110			273
1/16	79	1,[illegible]93	35	11	61	242	315	896	21	73	306			999
1/20	59	930	16	15	130	336	359	692	28	60	212			631
1/31	54	799	0	10	208	918	458	962	77	240	305			65
2/5	[illegible]	545	21	7	200	519	528	1,111	57	154	531			300
2/13	105	566	65	13	171	526	441	892	21	67	580			112
2/18	90	896	54	16	151	531	543	959	75	138	863			780
2/24	44	646	9	6	69	339	456	1,000	49	185	896			345
3/14	35	415	11	4	316	659	850	1,226	61	123	573			0
3/19	93	694	56	25	576	844	678	1,000	29	46	426			0
4/3	64	823	33	10	244	355	221	493	16	44	415			1,163
4/7	41	474	12	12	594	844	402	757	51	114	828			15
4/15	76	687	28	15	599	984	414	699	44	27	752			78
4/22	51	585	13	5	527	803	365	710	41	250	842			119
4/30	68	807	9	18	483	644	509	928	43	107	680			312
5/8	0	0	0	0	59	115	34	190	0	0	60			7,875
5/12	58	587	11	9	113	168	569	937	25	104	553			83
5/23	12	155	5	6	88	340	280	448	10	25	525			343
Totals by Week														
1	192	2,577	9	50	320	1,007	2,019	3,552	169	400	2,345	10,210	43,780	3,816
2	264	3,605	66	57	523	1,462	1,450	3,188	156	387	882	9,521	39,779	2,057
3	332	3,452	149	52	799	2,833	2,426	4,924	279	784	3,175	10,456	48,680	1,602
4	309	3,093	140	66	2,329	2,686	2,565	4,175	201	354	2,994	12,797	47,604	1,256
5	189	2,134	38	38	1,270	2,070	1,757	3,213	119	486	2,660	9,036	35,122	8,732
Total	1,286	14,861	402	263	5,241	11,058	10,217	19,052	924	2,411	12,056	52,020	213,774	17,463

Table C-2. Terminal log sheet summary data - New Mexico (page 1 of 2)

Sample day	Number of terminals in use	Type 1 Use								Type 2 Use			
		Number of items	Time	Items found	Items rejected	Items held	Items accepted	Items revised		Number of items	Time	Items found	Items held
								C	O				
11/6	5	528	2,096	388	9	122	157	45	73	8	145	0	0
11/11	5	365	1,485	230	6	56	109	18	44	12	153	5	0
11/21	5	331	1,841	251	18	59	108	6	64	22	390	3	0
11/27	5	434	2,075	341	10	16	112	23	91	8	85	6	6
12/3	5	283	1,328	194	4	25	31	13	65	16	300	3	12
12/20	4	214	880	176	0	24	40	0	106	24	182	1	9
12/31	No Use												
1/8	5	341	1,724	251	0	34	94	19	112	8	145	2	5
1/16	5	174	1,125	158	9	14	59	11	46	14	215	1	0
1/20	5	392	1,819	285	3	55	69	6	75	22	305	2	5
1/31	5	398	2,114	321	17	13	117	21	151	8	165	0	5
2/5	5	258	1,580	177	2	14	77	6	56	5	315	0	0
2/13	5	377	1,557	272	4	8	97	4	96	20	320	6	0
2/18	3	315	1,265	213	0	6	41	37	61	8	220	1	0
2/25	3	278	1,035	188	0	11	82	1	45	10	223	0	0
3/4	5	533	2,368	360	10	15	170	11	128	7	130	0	5
3/19	5	411	2,036	314	3	8	120	55	91	17	245	6	8
4/3	5	521	2,161	368	10	47	186	6	107	15	161	8	7
4/7	5	450	1,955	284	2	4	107	3	141	13	73	13	3
4/15	5	561	2,255	420	39	29	178	4	126	11	115	1	4
4/22	5	624	2,432	470	7	15	140	10	130	8	157	3	2
4/30	5	468	1,866	310	7	19	169	6	96	11	149	4	5
5/8	5	32	240	27	0	2	8	7	10	1	12	0	0
5/12	5	427	1,666	315	6	7	85	19	123	2	15	0	0
5/23	5	614	2,497	401	4	48	137	12	141	13	128	0	0
Totals by week													
1	25	1,941	8,825	1,404	47	278	517	105	337	66	1,073	17	18
2	19	1,121	5,548	870	12	127	262	36	339	68	847	6	19
3	21	1,626	1,551	1,171	23	52	414	69	409	51	1,243	7	5
4	25	2,476	10,775	1,746	64	103	761	79	593	63	724	28	27
5	25	2,165	8,701	1,523	24	91	539	54	500	35	461	7	7
Total	115	9,329	41,400	6,714	170	651	2,493	343	2,178	283	4,348	65	76

Table C-2. Terminal log sheet summary data - New Mexico (page 2 of 2)

	Type 3 Use				Type 4 Use		Type 5 Use		Type 6 Use		Types 7,8,9 Use			
Sample day	Number of items	Time	Items found	Items held	Number of items	Time	Number of items	Time	Number of items	Time	Time	Total number of items	Total time used	Down time
11/6	23	114	19	0	28	59	0	0	0	0	175			0
11/11	14	150	3	0	17	89	0	0	0	0	125			420
11/21	17	230	7	0	0	0	0	0	0	0	105			90
11/27	16	107	5	6	0	0	0	0	0	0	0			0
12/3	23	265	11	0	0	0	84	210	0	0	110			55
12/20	13	120	10	0	0	0	0	0	0	0	30			0
12/31	No use													
1/8	15	185	2	0	2	45	0	0	0	0	40			40
1/16	8	165	0	0	0	0	0	0	0	0	120			90
1/20	8	125	0	0	6	15	43	130	0	0	178			0
1/31	1	15	0	0	7	35	34	55	0	0	45			30
2/5	0	0	0	0	13	35	32	140	0	0	55			147
2/13	4	79	2	0	16	78	0	0	0	0	75			0
2/18	7	40	6	1	0	0	24	120	0	0	0			2
2/25	1	20	0	0	0	0	48	100	0	0	0			0
3/14	4	40	0	0	0	0	0	0	0	0	35			0
3/19	0	0	0	0	0	0	47	110	15	15	120			0
4/3	6	95	3	1	0	0	0	0	64	55	135			80
4/7	3	70	0	0	0	0	122	220	0	0	60			60
4/15	14	124	0	1	24	154	42	60	0	0	2			0
4/22	11	70	0	3	8	60	55	125	46	45	35			0
4/30	11	180	1	1	37	145	9	50	0	0	45			0
5/8	2	12	2	0	0	0	0	0	0	0	33			2,916
5/12	37	579	19	14	10	30	58	150	0	0	150			10
5/23	20	207	16	1	1	10	3	15	0	0	60			0
Totals by week														
1	93	866	45	6	45	148	84	210	0	0	515	2,229	11,354	565
2	44	595	12	0	8	60	43	130	0	0	368	1,284	7,662	130
3	13	154	8	1	36	148	138	415	0	0	175	1,864	9,686	179
4	27	329	3	2	24	154	211	390	79	70	[illegible]	2,880	12,559	140
5	81	1,148	38	19	56	245	125	340	46	45	323	2,508	11,395	2,926
Total	258	3,092	106	28	169	755	601	1,485	125	115	1,733	10,765	52,656	1,310

Table C-3. Terminal log sheet summary data - small academic libraries (page 1 of 6)

Sample day	Number of terminals reporting*	Type 1 Use								Type 2 Use			
		Number of items	Time	Items found	Items rejected	Items held	Items accepted	Items revised		Number of items	Time	Items found	Items held
								C	O				
11/6	6 (5)	324	954	245	3	26	155	13	42	1	20	0	0
11/11	6 (5)	302	1,236	230	0	44	134	14	14	0	0	0	0
11/21	7	275	1,556	228	2	35	106	18	65	6	160	0	0
11/27	7	300	1,674	223	0	34	74	22	42	50	658	0	15
12/3	8	387	1,596	286	2	31	110	36	55	6	85	3	1
12/20	5 (4)	151	575	136	0	28	74	12	22	1	40	0	0
12/31	5	152	831	91	0	2	45	8	21	0	0	0	0
1/8	8 (7)	401	1,686	307	4	36	205	25	54	15	184	2	4
1/16	8	334	1,397	134	13	64	106	15	23	13	320	1	6
1/20	7	209	1,156	151	1	44	44	16	49	9	235	0	6
1/31	9	305	1,222	260	2	63	119	25	42	7	105	1	4
2/5	9	175	940	152	5	15	79	19	29	5	230	0	0
2/13	8	346	1,594	240	1	25	132	20	60	28	245	18	0
2/18	9	306	1,446	260	7	32	142	29	77	16	265	0	0
2/24	9	420	2,000	310	0	48	146	38	44	13	392	0	2
3/14	8	318	1,065	212	3	22	51	32	45	2	53	0	0
3/19	8	332	1,463	253	0	31	101	37	50	14	294	4	2
4/3	7	152	695	117	0	26	26	2	27	5	80	3	0
4/7	8	576	2,420	356	15	28	147	28	105	9	263	0	0
4/15	9	247	1,141	196	5	16	102	20	32	28	427	0	3
4/22	9	518	1,994	381	5	32	92	24	62	17	239	0	0
4/30	8	219	1,301	165	0	25	42	9	41	10	190	0	6
5/6	6 (4)	35	385	32	0	0	10	6	15	0	0	0	0
5/12	7	191	974	154	2	13	101	18	40	48	635	0	7
5/23	6	139	946	133	5	22	64	8	13	2	107	0	0
Totals by Week													
1	34 (32)	1,588	7,016	1,212	7	170	579	103	218	63	923	3	16
2	33 (31)	1,247	4,645	819	18	174	474	76	169	38	779	3	16
3	44	1,552	7,202	1,222	15	183	618	131	252	69	1,237	19	6
4	40	1,625	6,784	1,134	23	123	427	119	259	58	1,117	7	5
5	36 (34)	1,102	5,600	865	12	92	309	65	169	77	1,171	0	13
Total	187 (181)	7,114	32,247	5,252	75	742	2,407	494	1,067	305	5,227	32	56

* Number in parenthesis represent number of terminals in use

Table C-3. Terminal log sheet summary data - small academic libraries (page 2 of 6)

	Type 3 Use				Type 4 Use		Type 5 Use		Type 6 Use		Types 7,8,9 Use			
Sample day	Number of items	Time	Items found	Items held	Number of items	Time	Number of items	Time	Number of items	Time	Time	Total number of items	Total time used	Down time
11/6	10	60	0	0	17	80	176	330	12	2[illegible]	175			80
11/11	4	90	0	0	8	27	65	105	5	20	170			780
11/21	24	300	1	0	188	241	20	36	0	0	122			0
11/27	12	157	0	1	11	21	38	60	0	0	0			0
12/3	10	170	3	1	27	184	204	500	3	[illegible]	195			45
12/20	4	90	0	0	37	45	15	30	0	0	0			0
12/31	8	211	2	0	17	109	37	92	0	0	0			32
1/8	16	244	6	1	47	395	31	90	5	12	50			0
1/16	70	1,291	32	0	53	195	3	10	0	0	60			348
1/20	38	775	16	0	114	223	117	312	0	0	5			435
1/31	26	328	0	0	196	800	82	205	2	10	30			20
2/5	28	396	17	0	194	474	330	622	0	0	0			15
2/13	62	241	34	0	163	476	79	215	4	15	65			10
2/18	52	563	38	1	150	529	126	180	0	0	473			225
2/24	25	383	9	3	64	324	167	440	7	32	356			50
3/14	25	323	11	4	304	586	106	108	0	0	150			0
3/19	23	344	8	4	547	764	253	311	1	2	111			0
4/3	25	380	20	0	235	285	0	0	0	0	135			620
4/7	17	264	5	1	588	797	145	258	3	5	168			0
4/15	39	278	13	0	571	734	50	90	3	160	240			0
4/22	30	445	9	0	508	620	168	333	2	180	90			0
4/30	32	472	0	2	428	315	92	200	0	0	127			40
5/8	0	0	0	0	43	55	0	0	0	0	0			2,320
5/12	43	406	9	0	102	105	113	240	9	70	222			50
5/23	7	142	5	0	35	85	58	82	0	0	115			0
Totals by Week														
1	60	796	4	2	251	553	503	1,031	20	50	662	2,485	11,031	905
2	136	2,611	54	1	268	967	203	534	5	12	115	1,897	10,663	815
3	193	1,191	98	4	767	2,603	784	1,662	13	57	924	3,378	15,596	320
4	129	1,589	57	9	2,245	3,166	554	767	7	167	804	4,618	14,394	620
5	112	1,465	23	2	1,116	1,180	431	855	11	250	554	2,849	11,075	2,410
Total	630	8,372	236	18	4,647	8,469	2,475	4,849	56	536	3,059	15,227	62,759	5,070

Table C-3. Terminal log sheet summary data - middle academic libraries (page 3 of 6)

Sample day	Number of terminals reporting*	Type 1 Use								Type 2 Use			
		Number of items	Time	Items found	Items rejected	Items held	Items accepted	Items revised		Number of items	Time	Items found	Items held
								C	O				
11/6	7	377	1,798	265	2	37	163	45	79	37	420	0	0
11/11	7	422	1,724	326	4	47	145	45	58	32	347	0	0
11/21	7	509	2,468	396	1	76	162	67	87	15	142	1	0
11/27	7	422	1,688	275	1	70	71	50	77	13	165	0	7
12/3	7	558	2,433	434	1	120	135	72	79	11	185	0	7
12/20	7	320	1,368	244	0	50	90	38	54	19	297	0	8
12/31	7 (5)	315	1,249	264	0	52	75	52	67	5	39	0	3
1/8	7	278	1,145	231	0	59	73	31	571	40	455	0	33
1/16	7	334	1,833	229	1	38	128	55	62	15	340	2	10
1/20	7	520	2,270	410	1	52	181	92	108	13	172	0	7
1/31	7	357	1,682	228	1	66	42	56	41	18	339	0	8
2/5	7	306	1,822	263	1	47	82	55	52	5	72	0	0
2/13	7	475	2,003	329	1	54	117	73	77	14	155	11	15
2/18	7	353	1,566	281	19	43	92	61	59	13	185	0	9
2/24	7	449	2,314	377	3	80	163	51	84	17	187	0	6
3/14	7	305	1,538	249	5	49	104	49	63	6	106	1	2
3/19	7	323	1,572	266	2	48	77	76	61	8	81	6	5
4/3	7	400	1,737	328	3	72	110	42	94	16	183	8	15
4/7	7	360	1,681	290	13	49	119	78	31	6	55	0	6
4/15	7	488	2,217	445	9	71	114	95	125	15	172	0	11
4/22	7	417	2,174	349	0	66	121	50	111	1	38	0	0
4/30	7	440	1,696	352	0	41	136	56	106	27	302	8	10
5/8	6	19	130	19	0	2	2	7	8	2	35	2	0
5/12	6	335	1,468	276	5	60	114	58	53	16	117	2	8
5/23	3	207	1,062	159	0	12	80	24	11	1	25	0	1
Totals by week													
1	35	2,288	10,111	1,696	9	350	679	279	380	108	1,259	1	14
2	35 (33)	1,767	7,865	1,378	2	251	547	268	348	92	1,303	2	61
3	35	1,940	9,387	1,478	25	290	496	296	313	67	938	11	48
4	35	1,876	8,745	1,578	32	289	524	340	374	51	597	15	39
5	29	1,418	7,948	1,155	5	181	453	195	289	47	517	12	19
Total	169(167)	9,289	44,056	7,285	73	1,361	2,699	1,378	1,704	365	4,614	41	181

* Number in parenthesis represent number of terminals in use

Table C-3. Terminal log summary sheet data - middle academic libraries (page 4 of 6)

Sample day	Type 3 Use				Type 4 Use		Type 5 Use		Type 6 Use		Types 7,8,9 Use			
	Number of items	Time	Items found	Items held	Number of items	Time	Number of items	Time	Number of items	Time	Time	Total number of items	Total time used	Down time
11/6	18	220	0	1	1	15	224	363	2	8	221			215
11/11	20	228	5	0	2	28	231	487	8	25	45			490
11/21	13	157	0	12	2	10	309	533	28	68	110			110
11/27	23	256	0	10	1	4	149	347	0	0	30			55
12/3	11	140	0	10	39	352	183	396	4	12	152			265
12/20	17	162	0	9	4	35	249	522	0	0	70			0
12/31	7	70	0	2	3	86	129	260	6	10	60			27
1/8	21	245	0	13	5	74	150	460	0	0	0			230
1/16	7	75	0	7	6	32	203	606	0	0	156			281
1/20	20	125	0	10	5	58	183	370	0	0	60			180
1/31	16	156	0	5	9	95	219	466	0	0	45			25
2/5	5	78	1	2	3	15	117	384	5	15	190			30
2/13	36	230	10	29	5	25	225	467	5	12	125			72
2/18	20	248	3	10	1	2	335	589	1	2	22			495
2/24	8	103	0	3	0	0	233	600	5	26	0			155
3/14	8	77	0	0	8	48	620	917	6	15	3			0
3/19	16	160	4	11	3	10	258	517	0	0	60			0
4/3	17	228	4	10	0	0	113	293	0	0	15			230
4/7	17	160	0	11	1	17	240	484	13	40	300			15
4/15	22	269	4	13	6	148	281	472	10	35	130			42
4/22	18	191	0	5	12	123	167	329	6	15	2			65
4/30	34	320	9	16	10	117	271	520	3	10	50			21
5/8	0	0	0	0	0	0	16	120	0	0	0			1,365
5/12	11	126	2	5	7	52	289	552	0	0	41			0
5/23	0	0	0	0	6	40	109	171	0	0	0			343
Totals by week														
1	85	1,001	5	33	45	409	1,096	2,126	42	113	558			1,135
2	72	677	0	41	23	285	914	2,218	6	10	346			718
3	87	815	14	49	18	137	1,129	2,506	16	55	382			777
4	80	894	12	45	18	223	1,512	2,683	29	90	508			287
5	63	636	11	26	35	332	952	1,692	9	25	43			1,794
Total	387	4,023	42	194	139	1,386	5,603	11,225	102	293	1,837			4,711

Table C-3. Terminal log sheet summary data - large academic libraries (page 5 of 6)

Sample day	Number of terminals reporting*	Type 1 Use								Type 2 Use			
		Number of items	Time	Items found	Items rejected	Items held	Items accepted	Items revised		Number of items	Time	Items found	Items held
								C	O				
11/6	10	823	4051	606	13	142	237	74	131	29	372	0	0
11/11	10	829	3772	610	6	130	222	53	191	21	273	5	0
11/21	10	583	3038	455	23	89	192	43	104	59	856	3	4
11/27	10	970	3053	702	11	79	309	56	168	30	309	6	13
12/3	10	931	3664	619	4	104	271	15	96	32	482	4	15
12/20	10 (9)	951	2672	594	3	109	219	82	175	53	477	3	24
12/31	10 (4)	627	1530	451	6	38	201	142	64	25	172	0	0
1/8	10	832	3738	389	3	76	293	81	119	26	423	0	14
1/16	10	420	2402	531	9	39	135	52	83	53	960	1	8
1/20	10	1227	3883	687	12	101	288	62	109	40	505	2	11
1/31	10	972	4122	711	18	131	356	56	184	19	337	0	8
2/5	10	629	3015	445	3	88	229	47	59	25	395	5	5
2/13	10	704	3164	569	4	74	148	135	92	102	636	13	7
2/18	8	689	3010	428	2	53	128	123	62	115	1090	4	3
2/24	8	776	3290	562	3	96	272	99	48	27	338	0	5
3/14	10	952	3813	683	16	106	347	50	167	92	668	38	26
3/19	10	973	3595	713	4	102	339	110	82	72	620	42	12
4/3	10	711	2968	492	10	50	231	54	112	94	606	15	13
4/7	10	1037	3929	752	3	88	339	58	193	65	694	52	28
4/15	10	854	3443	646	58	103	214	85	137	108	1212	8	21
4/22	10	899	2925	568	7	154	193	59	130	204	1207	22	24
4/30	10	744	2899	505	7	63	272	61	123	66	629	29	17
5/8	10 (5)	123	430	74	0	5	1	34	0	4	132	0	0
5/12	10	1395	3838	812	8	171	305	92	143	33	457	0	24
5/23	10	1075	3866	678	4	102	268	97	155	54	508	1	14
Totals by week													
1	50	4136	17,578	2992	57	544	1231	301	690	171	2292	18	32
2	50 (43)	4057	14,225	2652	33	363	1136	419	550	197	2537	6	57
3	46	3770	16,601	2715	30	442	1132	460	445	288	2796	22	28
4	50	4527	17,748	3286	91	449	1470	357	691	431	3800	155	100
5	50 (45)	4236	13,958	2637	26	495	1039	343	551	361	2933	52	79
Total	246 (234)	20,726	80,110	14,282	237	2293	6008	1880	2927	1448	14,358	253	296

* Number in parenthesis represent number of terminals in use

Table C-3. Terminal log sheet summary data - large academic libraries (page 6 of 6)

Sample day	Type 3 Use				Type 4 Use		Type 5 Use		Type 6 Use		Types 7,8,9 Use			
	Number of items	Time	Items found	Items held	Number of items	Time	Number of items	Time	Number of items	Time	Time	Total number of items	Total time used	Down time
11/6	23	220	19	0	35	89	130	196	7	40	390			184
11/11	14	150	3	0	20	119	130	154	21	40	215			850
11/21	29	414	1	3	6	35	125	180	22	19	520			235
11/27	22	172	5	6	0	0	85	175	2	5	80			0
12/3	33	370	11	10	6	135	53	132	0	0	110			202
12/20	22	210	10	3	6	25	63	73	2	12	0			0
12/31	0	0	0	0	85	60	0	0	0	0	20			95
1/8	49	310	9	1	1	10	138	163	56	148	100			83
1/16	9	90	0	4	2	15	109	280	2	13	180			375
1/20	7	105	0	0	17	70	102	140	5	15	280			0
1/31	13	230	0	5	10	58	108	176	20	70	275			50
2/5	3	30	3	3	16	65	113	245	23	75	345			242
2/13	7	119	2	4	15	103	137	210	12	40	415			20
2/18	25	125	19	6	0	0	106	190	25	55	310			60
2/24	1	15	0	0	5	15	104	150	16	70	285			100
3/14	4	40	0	0	0	0	124	201	34	70	455			0
3/19	53	185	44	10	11	30	214	282	28	35	375			0
4/3	26	280	12	6	9	70	108	200	68	70	250			208
4/7	3	70	0	0	5	30	139	235	9	25	420			60
4/15	28	239	10	2	44	250	125	197	11	30	377			36
4/22	14	120	4	3	15	120	85	173	62	75	710			54
4/30	12	180	1	5	72	325	129	238	7	15	305			0
5/8	2	12	2	0	16	60	18	70	6	20	93			5756
5/12	41	634	19	18	14	41	225	295	13	21	440			10
5/23	25	220	16	7	48	225	116	210	5	10	614			0
Totals by Week														
1	121	1326	39	19	67	378	523	837	52	104	1315	5070	23,830	1471
2	87	715	19	8	84	180	412	656	65	188	580	4902	19,081	553
3	49	519	24	18	50	241	568	971	96	310	1630	4821	23,068	472
4	114	814	66	18	69	380	710	1115	150	230	1877	6001	25,964	304
5	94	1166	42	33	165	771	573	986	93	141	2162	5522	22,117	5810
Total	465	4540	190	96	435	1950	2786	4565	456	973	7564	26,316	114,060	8610

Table C-4. Summary of terminal log sheet data by sample week - academic libraries (page 1 of 2)

Sample day	Number of terminals in use	Type 1 Use								Type 2 Use			
		Number of items	Time	Items found	Items rejected	Items held	Items accepted	Items revised		Number of items	Time	Items found	Items held
								C	O				
Totals													
Week 1	119(117)	8,012	34,705	5,900	73	1,064	2,489	683	1,288	342	4,474	22	62
Week 2	118(107)	7,071	27,735	4,849	53	788	2,157	763	1,067	327	4,619	11	134
Week 3	125	7,262	33,190	5,415	70	915	2,246	887	1,010	424	4,971	52	82
Week 4	125	8,028	33,277	5,998	146	861	2,421	816	1,324	540	5,514	177	144
Week 5	115(108)	6,756	27,506	4,657	43	768	1,801	603	1,009	485	4,621	64	111
Grand Total	602(582)	37,129	156,413	26,819	385	4,396	11,114	3,752	5,698	2,118	24,199	326	533

*number in parenthesis represents number of terminals in use.

Table C-4. Summary of terminal log sheet data by sample week - academic libraries (page 2 of 2)

Sample day	Type 3 Use				Type 4 Use		Type 5 Use		Type 6 Use		Types 7,8,9 Use			
	Number of items	Time	Items found	Items held	Number of items	Time	Number of items	Time	Number of items	Time	Time	Total number of items	Total time used	Down time
Totals														
Week 1	266	3,123	48	54	363	1,340	2,122	3,994	114	267	2,535	11,219	53,949	3,511
Week 2	295	4,003	73	50	375	1,432	1,529	3,408	76	210	1,041	9,673	44,534	2,086
Week 3	329	3,245	136	71	835	2,981	2,481	5,139	125	422	2,936	11,456	54,453	1,569
Week 4	323	3,297	135	72	2,332	3,769	2,776	4,565	176	487	3,189	14,175	55,309	1,211
Week 5	269	3,267	76	61	1.316	2,283	1,956	3,533	113	416	2,759	10,895	54,399	10,014
Grand Total	1,482	16,935	468	308	5,221	11,805	10,864	20,639	604	1,802	12,460	57,418	262,644	18,391

Table C-5. Terminal log sheet summary - Public Libraries (page 1 of 2)

Sample day	Number of terminals reporting*	Type 1 Use								Type 2 Use			
		Number of items	Time	Items found	Items rejected	Items held	Items accepted	Items revised		Number of items	Time	Items found	Items held
								C	O				
11/6	4	196	1,050	155	3	60	0	17	44	2	35	0	2
11/11	4	151	984	118	0	27	0	16	26	3	70	0	0
11/21	4	114	729	96	0	37	12	32	7	1	45	0	0
11/27	4 (3)	53	550	52	1	23	0	21	5	3	90	3	1
12/3	4	69	690	63	0	31	13	6	12	1	18	0	0
12/20	3 (2)	142	596	118	2	17	3	2	10	4	59	0	0
12/31	3	97	519	88	1	27	12	22	26	1	10	0	0
1/8	3	83	585	68	0	19	19	8	13	2	25	0	2
1/16	4	176	1,149	126	0	47	2	50	16	4	40	0	2
1/20	4	204	1,437	180	0	44	21	89	26	4	86	0	0
1/31	4	94	778	90	1	7	7	53	14	0	0	0	0
2/5	4	177	1,034	145	0	45	3	66	31	0	0	0	0
2/13	4 (2)	117	874	87	0	20	1	43	22	0	0	0	0
2/18	4	146	809	131	0	51	33	26	21	0	0	0	0
2/24	3	85	569	84	0	47	1	5	31	4	48	0	0
3/14	3	292	1,084	150	1	35	6	59	42	0	0	0	0
3/19	4	240	1,034	196	2	37	1	47	103	0	0	0	0
4/3	4	167	850	116	1	47	3	22	43	0	0	0	0
4/7	4	233	1,091	214	0	132	16	18	47	0	0	0	0
4/15	4 (3)	161	937	153	0	38	9	42	64	0	0	0	0
4/22	4 (3)	222	949	134	0	71	11	38	14	0	0	0	0
4/30	4	215	1,258	125	0	68	7	3	28	0	0	0	0
5/8	3 (1)	2	30	2	0	0	0	0	2	0	0	0	0
5/12	3 (2)	119	527	102	0	34	0	16	34	4	40	0	0
5/23	3	196	740	118	0	56	0	50	0	4	40	0	0
Totals by week													
1		583	4,003	484	4	178	25	92	94	10	258	3	3
2		702	4,286	580	3	154	57	171	91	15	220	0	4
3		619	4,064	537	1	170	45	193	119	4	48	0	0
4		1,093	4,996	829	4	289	35	188	229	0	0	0	0
5		754	3,504	481	0	229	18	107	78	8	80	0	0
Total		3,751	20,853	2,911	12	1,020	180	751	681	37	606	3	7

* Number in parenthesis represent number of terminals in use

Table C-5. Terminal log sheet summary - Public Libraries (page 2 of 2)

Sample day	Type 3 Use				Type 4 Use		Type 5 Use		Type 6 Use		Types 7,8,9 Use			
	Number of items	Time	Items found	Items held	Number of items	Time	Number of items	Time	Number of items	Time	Time	Total number of items	Total time used	Down time
11/6	3	35	0	2	0	0	0	0	28	68	55			0
11/11	0	0	0	0	0	0	0	0	21	55	90			140
11/21	3	95	0	1	0	0	0	0	0	0	115			325
11/27	1	30	0	0	0	0	0	0	4	8	0			0
12/3	12	180	0	0	9	35	0	0	5	12	0			120
12/20	0	0	0	0	0	0	0	0	0	0	0			0
12/31	7	94	0	0	0	0	0	0	23	32	59			0
1/8	4	81	0	0	0	0	0	0	15	40	0			0
1/16	1	12	0	0	0	0	0	0	19	60	30			85
1/20	2	50	0	0	0	0	0	0	23	45	0			16
1/31	0	0	0	0	0	0	83	170	55	160	0			0
2/5	3	41	0	2	0	0	0	0	21	47	51			90
2/13	4	55	2	0	0	0	0	0	0	0	50			0
2/18	0	0	0	0	0	0	0	0	49	81	58			0
2/24	11	165	0	0	0	0	0	0	21	57	255			40
3/14	2	15	0	0	4	25	0	0	21	38	0			0
3/19	1	5	0	0	15	30	0	0	15	24	0			0
4/3	2	30	0	0	0	0	0	0	12	29	15			15
4/7	7	50	7	0	0	0	0	0	26	44	0			0
4/15	0	0	0	0	2	6	0	0	20	17	7			0
4/22	0	0	0	0	0	0	0	0	17	25	75			0
4/30	1	15	0	0	10	32	26	20	33	82	183			251
5/8	0	0	0	0	0	0	0	0	0	0	0			1,350
5/12	0	0	0	0	0	0	0	0	3	13	0			33
5/23	0	0	0	0	0	0	0	0	5	15	0			0
Totals by week														
1	19	240	0	3	9	32	0	0	58	143	260	679	4,939	585
2	14	237	0	0	0	0	0	0	80	177	89	811	5,009	101
3	18	261	2	2	0	0	83	170	146	345	414	870	5,302	130
4	12	100	7	0	21	61	0	0	94	152	22	1,220	5,331	15
5	1	15	0	0	10	32	26	20	78	135	258	877	4,044	1,634
Total	64	853	9	5	40	128	109	190	456	952	1,043	4,457	24,625	24,625

APPENDIX D

SUMMARY OF SITE VISITS

D.1 Introduction

Site visits were conducted during the months of December, January, April and May. The purpose of these visits was to examine procedural changes, attitudes and other areas that could not be derived from data collection forms. Each of the public libraries and New Mexico libraries were visited. A sample from the remaining Texas libraries was selected to be representative of the varying types and sizes of libraries participating in the study. These libraries consisted of Baylor University, University of Dallas, and The University of Texas at Austin.

Reflecting upon the wide range of libraries represented by these site visits and by all study participants, little by way of generalizations may be made. Especially diverse were the adjustments made to OCLC. For some, reorganization and major procedural changes were quickly adopted. Others appeared relatively unaffected, adapting terminal use to already existing procedures. In part, these attitudes and changes have influenced production and terminal utilization. Initial commitment to the system varied as did changes thereafter. Primary influences upon OCLC effectiveness range from attitudes, flexibility and organization to volume thruput and staffing. The site visit reports following present a partial picture of differences in these as well as some notable similarities.

D.2 General Remarks

D.2.1 Background

Serious consideration of costs, alternatives and criticism among the library representatives preceded the adoption of OCLC. However, when presidents of the IUC member institutions determined that OCLC was to be used, each institution was then committed ending further discussion. OCLC was the only available and viable system as yet in operation.

IUC libraries we visited financed the first year of OCLC participation with special grants or funds which financial officers could appropriate as part of the institional commitment to IUC. Presently, OCLC operating funds are part of the regular library budget.

The non-IUC libraries in Texas (the State library, three public libraries, a school processing center, the University of Texas at Austin, Baylor University and Texas Tech) entered the project under different conditions. Interested in public library participation in the OCLC experiment, the Texas State Library was able to interest three public libraries and a school processing center in the North Texas - IUC area. The state library appropriated a grant to make this possible through IUC. Approached by IUC, the University of Texas at Austin was immediately interested. The University of Texas at Austin presents a special case whose operations are described elsewhere in this report.

The three academic libraries in New Mexico initially decided against joining OCLC; however, a special bond issue passed in 1973 doubled their acquisition budgets for a period of five years. No allowances were made for increased staff, r[illegible]itating automation and/or outside contract service. [illegible]cipation in the tie-in with OCLC appeared the most appropriate solution. Costs were in part absorbed by these augmented book budgets.

D.2.2 Pre-Installation Planning

Preparing the profile is the common element of pre-installation planning for all libraries. This is a description of all catalogs, branch libraries, and other specially designated locations for purposes of computer-controlled printing of these designations and sorting for separate catalogs and locations. Profiling was usually done by the director of technical services, or the head cataloger, with the help of the network coordinator and varying degrees of participation by local staff.

Prior to installation, some libraries instituted polices to accept "good" cataloging records unchanged (including description, catalog and location designations, even series treatments). Others made selective acceptance policies. The remainder are gradually instituting such policies as they gain experience with the system. (For further information see Section D.2.8.)

Some libraries established special OCLC sections prior to going on-line, but most adaptations in the flow of work and material were made after operations actually started. Many libraries have done substantial rearranging

of processing departments. Some of these reorganizations would have occurred in any event; others have clearly occurred in response to the OCLC system. At least one director used the advent of the system as a vehicle for massive reorganization and staff reassignment prior to installation; the staff made subsequent changes in direct response to the capabilities of the system.

D.2.3 The Transition Period

The transition period is considered to be the time period immediately after terminal installation. During this time staff were required to adopt and learn the new system.

D.2.3.1 Resistance to Change

There were several reported instances of extreme difficulty during the first few weeks of operation. Resistance to or temporary inability to cope with necessary changes in procedures and responsibilities were among the causes. In most cases, (except where cataloging personnel were not included in the planning process) difficulties subsided as familiarity with the system increased. Where internal administrative expertise to handle unexpected changes in work-flow and job responsibilities was lacking, severe difficulties were allayed by concentrated consultation by the network coordinator. An incident of misinformation deliberately passed to the person responsible for terminal operations was reported. Complaints, then, resulted when materials were mishandled. This subsided when it was made clear that OCLC participation had the complete support of the administration.

Several professionals stated explicitly that they had been quite opposed to using the system but were now delighted with it. There is still some distrust of the system which goes well beyond an appropriate technical and professional knowledge of the limitations of the tools one depends upon. A tendency to design procedures, work-flows and discretionary authority so as to prevent all possible errors was noted in some libraries. We suspect these tendencies existed before the terminals arrived.

There are still many instances in which only minimal changes in procedures and policies have taken place, so that all the capabilities of the system are not being used. Some of these can be attributed to individual reluctance to change and to ordinary lethargy and shortsightedness, while other instances are due to lack of time for planning and instituting changes.

D.2.3.2 Learning to Use the Terminal

While there was some doubt about the value of training which was attempted before a terminal was actually available for use, everyone was quite positive about the ease of teaching and learning the basic operation of searching while sitting at the terminal. "Less than an hour" or "two hours at most" were all that was required.

D.2.3.3 Learning to Use the System

The extent to which individuals begin to do more complicated operations such as modification of records, input of original records, ordering cards, etc., appears to

be a function of individual capability, complexity of local policies and local work rules governing the kinds of work which professionals, technical assistants, clerks and students may do. No library restricted the use of the terminals to professional staff only. One library did not encourage terminal use beyond the OCLC staff which, at the time of our visit, effectively limited its use to professionals only. Examples of the variations found are: in one library a cataloging assistant with two years of college and one month of training in the library was modifying records and ordering cards with little or no revision; in two others copy located in the pre- or post-order search process (e.g., in the proof-slip file) is used by a clerk with many years experience to order cards when the OCLC entry is an exact match or needs only slight modification; in a third, part-time students work in the evenings doing original input from catalogers' work-sheets for a special collection (they do not order cards), and their work is revised the next morning.

D.2.4 Hardware Reliability, System Downtime, and Response Time

Most libraries visited had experienced one instance of terminal failure requiring repair or replacement. Only one library had experienced two such incidents.

Though system down time has apparently been much less than anticipated, its occurence can disrupt processes. Libraries having large staffs and full terminal utilization with fairly tight schedules find that one or more days' production is simply lost. However, for these large libraries, there is frequently other work for people to do. Libraries

with smaller staffs and part-time personnel, beyond losing several days production, find it much more difficult (usually because of extra supervisory time required) to locate substitute work for people prevented from doing scheduled work at the terminal. Nevertheless, at the present rate, down time does not appear sufficient, of itself, to cause rejection of the system. It should be noted that down time is due not only to problems with OCLC, but also difficulties with telephone lines and equipment.

Slow response time seems the most difficult for the staffs to accept. Some have better comparative statistics than others, e.g., the searcher at UT-Austin who saw his search rate decrease from about 25 items per hour to 15 or 20 when he was rescheduled from early morning (fast response time) to late morning (slow response time). Public libraries who are often ordering several sets of cards at one time appeared to experience a great deal more slow response time recalling and re-editing records than in researching records. Everyone we visited complained about varying degrees of slow response, some quite vehemently. Time spent waiting for response is absolutely unproductive time, while system down time can, at least in theory, be used to do other work.

D.2.5 Staff Comments

Because of the number of libraries visited (ten in all), several comments relating to OCLC's general performance, terminal utilization and effects should be noted. None of these comments represent a consensus of opinion,

nor do they necessarily reflect upon OCLC service. They are merely the insights furthered by staff members in contact with terminal operations.

- The quality of cataloging in OCLC is uneven, demanding supervisory personnel to review records before card production.
- The number of duplicate records in the data base impedes searching.
- The value of OCLC in pre-order searching would be further increased if pricing and vendor information were available with the record.
- Dewey decimal numbers are often omitted from the input record requiring a number of libraries to duplicate classification efforts despite the existence of the record.
- The delay in inputting MARC tapes is annoying.
- Increased efficiency in thruput and card production has caused backlogs in other areas (e.g., filing).
- The glare factor of terminal screens is bothersome in certain lighting, especially to operators with glasses.
- Searching foreign language materials through OCLC is exceptionally difficult.
- There is an inordinate amount of time spent in keeping up with changes in IUC and OCLC procedures and policies.
- There is a lack of staff at the network level hindering communication and consulting.

- Replacement of lost card shipments (a relatively infrequent incident) is often unnecessarily delayed.
- The quality of card stock prevents easy revision or correction.
- The OCLC manual is not indexed sufficiently and is often difficult to understand for the novice.
- The terminal, which has been incorporated into orientation tours, has become a good public relations tool for the technical services divisions.
- Since highest productivity is achieved at the terminal, other time has to be scheduled in view of access to the terminal. It takes some time to organize work around the terminal.

D.2.6 Interlibrary Loan

Three factors influenced the use of the system for interlibrary loan searching: physical proximity of ILL staff to the terminal, number of within-state locations, and available terminal time.

There are several libraries where the terminal is not easily accessible to interlibrary loan staff. These libraries have not found it worthwhile to use the terminal for searching or verification except as a last resort. Even though there are still relatively few within-state locations listed, an item can be considered verified if found in the data base eliminating tedious searching in other tools. Furthermore, the potential of the system is readily seen

even from the few within-state locations thus far noticed. (There is considerable incentive to send requests within state and regional channels, due to sharing and reimbursement policies in Texas and New Mexico.)

Where the monetary incentive to stay within the state is not as great (i.e., academic libraries), the ability to verify and locate through the terminal is even more valuable. Requests can be spread among several libraries rather than burdening the large research libraries. Generally, too, libraries are finding that the volume of requests made of them from other libraries which located them through OCLC is increasing.

A problem mentioned by several people in May, 1975, near the end of the study, was that there is an increasing number of items being requested both from and by them which cannot be filled because the item has not yet been completely processed, even though listed in the OCLC data base.

D.2.7 Acceptance of Records

Many libraries are still in the process of changing local policies to accept more cataloging records found in the data base without modification. In overview, the following appears to be true: many libraries with 6-8 months on the system accept recent LC copy without modification (except for systematic differences such as classification schemes.) Many others are working to change policies so as to accept records they had not originally considered accepting. Contributed copy, when it is clearly from LC copy, is usually accepted to the same extent as regular LC copy with some minimal checking.

Systematic, predictable, and required modifications, such as added Sears' subject headings or Dewey or other class numbers appear to be well integrated into work routines. Less frequent modifications such as abbreviated headings or the order of subdivisions in geographic headings are troublesome. However, these are areas in which changes to full acceptance of LC are still taking place.

Several libraries perform authority work after cards have arrived. Changes in previous records and cross-references are done at this time. Though very efficient, problems are anticipated by the libraries. It will be of some interest to see which of these materialize and how difficult they are to solve.

It appears that a few libraries are modifying a substantial portion of the data (as much as 80 percent) in entries which are nevertheless "acceptable." One cause of this is related to the inability to get a large number of fairly autonomous clients to accept a "standard" product. This is expected to change with time. In other cases, lack of commitment to and skepticism about long-term use of the system provides little justification for adopting new standards.

It should be noted that everyone has found it desirable to maintain some kind of check upon whether or not cards are received. This varies from a simple file of slips for sets ordered each day matched against the shelf list pack when the shipment for that day arrives, to a card-by-card check of each shipment to ascertain that all cards for all items have been included. No statistics appear to be available on the frequency with which card-by-card checking determines that one or more cards from a set are missing.

D.2.8 Changes Made After Installation

The most impressive difference among libraries is the extent to which changes are made once the system is operational. For purposes of discussion we have constructed three descriptive categories:

1. Minimal. The terminal is inserted at the point in the original processing flow where card copy is prepared and cards produced. Only those changes necessary to move the work to the terminal and on to physical processing and filing have been made. This is often accompanied by a substantial amount of checking cards upon receipt.

   Little pre-order or ILL searching is done on the terminal. Supervision and revision of data entry and card ordering may range from rigid to non-existent. This appears unrelated to the amount of checking done when cards are received. That is, libraries maintaining rigid supervision of data entry and card ordering do not necessarily accept cards with only minimal checking, while those with relatively relaxed supervision of entry and ordering do not necessarily have a rigid card checking process.

2. Evolutionary. Many changes have been made in work flow, assignment of discretionary authority, and procedures, not only in direct connection with terminal operations and card ordering, but in other areas of processing. As selected examples (not uniformly true in all libraries): Routine pre-order searching for recently published and selected older materials is done at the terminal; subscriptions to proof-slips searching and commercial card services, temporary catalog slips have been eliminated because cards arrive promptly; investigation is being initiated into the possibilities of cooperative decision rules for choosing ILL sources when so many locations appear for each item in the data base; operating staff are experimenting with new routines; because the administration supports the institutional responsibility to make the data available to a wider community, money has been made available for additional staff to input data for unique collections, though cards may not be needed.

3. Analytical. The changes characteristic of the evolutionary category are present and are examined regularly for the purpose of improving operations further while assuming that new characteristics of the system are utilized as soon as practicable. Attempts have been made to establish "standard" times for processing various types of material through the terminal.

The difference between the "evolutionary" and "analytical" categories may not be large or important presently (all of our observations were made within the first year after terminal installation). However, the differences between "minimal" change and the others are very great. Some libraries within the "minimal" category appear satisfied that the OCLC terminals have supplanted their former card production operations with the attendant problems of in-house equipment and supplies, maintenance and production scheduling. Other libraries in this group, however, have as yet been unable to commit themselves to even this much change.

D.3 Individual Library Descriptions

In this section, all the libraries we visited are described at least briefly. Libraries described extensively are: Dallas Public Library, which is taking an active and analytical approach to automation and other operations and was the only participating library running true parallel OCLC and manual systems; Texas State Library, which has been particularly interested in experiment and analyses; and The University of Texas at Austin which has pushed a phenomenal amount of cataloging through only two terminals, and has also been actively experimenting and analyzing.

D.3.1 Dallas Public Library (DPL)

Dallas Public Library's size and processing volume necessitated increased assistance. Particularly interested in introducing automation in all areas of library processing, the pilot project using OCLC under the auspices of the state library and in conjunction with IUC offered a viable opportunity for experimentation. They do envision eventual automation at all levels of the library system. With the expected opening of three new branches, OCLC was viewed as easing the increased workload within the cataloging department. There was also interest in possible future products (e.g., a union catalog). As with all the public libraries in this project, DPL's OCLC participation was funded through LSCA funds, including the creation of two staff positions exclusively involved in terminal operations.

Profiling for DPL was extremely difficult requiring considerable time of both DPL staff and the network coordinator. This might have been ameliorated if DPL had been able, in the time available, to combine or eliminate many of its catalogs with all their idiosyncracies. Testing all the variations which were specified in programming has proved time-consuming as well.

Catalog Department

Previously the catalog division consisted of four subdivisions: bibliographic search, cataloging, card reproduction and catalog maintenance units. The bibliographic search unit is now under the jurisdiction of the acquisitions department. It is the responsibility of the bibliographic searchers to search order cards in the official catalog, proof slip files and NUC. Generally only new titles need

be forwarded to catalogers. Catalogers are responsible for revision and adaptation of LC cataloging records if available. If no cataloging information exists, then catalogers must perform original cataloging description and classification. Since the advent of OCLC, the data base is also searched for cataloging information.

DPL was the single participating library conducting parallel operations during this study. For this purpose, items were sorted during sampling intervals according to subject and level of cataloging difficulty (1/3 for OCLC processing and 2/3 for manual processing). Each group remained separate throughout processing. Items which are processed through OCLC are searched in the official catalog, placed on shelves, searched and, if not found, replaced on shelves for future searching. If found, appropriate revisions are made if necessary and cards are produced. The item is then forwarded to physical processing and finally returned to await cards. After the cards are received, the item and shelf list card is returned to physical processing for accessioning. The OCLC librarian is attempting to establish procedures which might avoid these multiple handlings. Items which are not located in the data base within a reasonable length of time are forwarded to catalogers for original or routine cataloging. There was initial hesitancy about inputting original cataloging because of the scrutiny records would receive by other catalogers. This was shortly overcome by realizing the errors of other participating libraries. However, there is still a great deal of emphasis placed on the accuracy of input.

Authority work at DPL has been reorganized. It is now partially the responsibility of filers to note changes in entries, cross references and new entries. Because DPL's

cataloging department has traditionally been extremely accomodating to branch libraries, by revising and re-issuing cards in accordance with their requirements, a certain amount of dissatisfaction is expected. Unless the branches become more willing to accept cards as is, and submit to a generalized formula, there may be additional demands on the library's OCLC processing staff as yet unfelt.

ILL Use

Because of the distance between the main library which houses the interlibrary loan department and the building where technical services are housed, requests for searches of OCLC have been phoned in by the ILL staff. This has meant that those requests searched in OCLC have been uncited elsewhere. These requests have received an unusually good find rate (about 50 percent). Concentration still remains on TWX and TNR despite locations available on OCLC. This is in part due to the absence of Texas locations at the time of our visit. It was decided during our visit that one of the ILL staff members would be trained on OCLC and search OCLC first for some requests received.

Order Department Use

There has yet to be any use of OCLC in ordering processes. However, some experimentation was in the planning stages. There is presently a restructuring in the acquisitions department (including the incorporation of the bibliographic search unit) and perhaps an eventual restructuring of the entire technical services division.

D.3.2 Texas State Library, Austin (TSL)

Original concern over TSL participation in OCLC due to federal funding required was overcome by public library insistence upon TSL participation, as well as by TSL staff interest.

Continued use by TSL of OCLC, however, necessitates increased terminal use to justify its cost. Presently, only about 6,000 titles per year are processed. Limited Texas holdings in the data base hinders ILL location searching. However, plans to catalog materials for other state agencies are under consideration. Staff enthusiasm for OCLC would indicate that discontinuance would not be well-received.

Groundwork Prior to Going On-Line

The cataloging department had previously done customized cataloging for each of four libraries: Reference, Profesional Library Collection, Genealogy, and Archives. The cataloging head arranged to convert all staff members to OCLC, clearing them through the Director of Technical Services and the Assistant State Librarian. The cataloging staff then worked with the four library department heads and their staffs.

This was accompliched in about two days of study and five hours of meetings. Three libraries agreed to accept the new cataloging without change, handling conflicts between entries, series tracings, etc. with cross references or recataloging when feasible. There are conflicts, however. The work in cataloging is expected to increase because of them. At the time of our visit this additional work had yet to be realized.

Genealogy could not agree to accept a new classification. Though classification must always be constructed in a different manner and certain geographic subdivisions must be reversed from the order used by LC, the descriptive portion of the records is generally acceptable.

The Archives Collection will eventually be recataloged. While archives is accepting the new cataloging, older material is classified under decimal numbers which do not correspond to Dewey.

The acquisitions department does not use the terminal at all. At about the time the terminal was being installed, there was a complete change of acquisitions personnel. It was decided not to introduce new procedures to the training and orientation of the new personnel.

Policies and Procedures

If the Dewey number has been supplied by the Library of Congress (an 082 field) it is automatically accepted up to the second ' mark. They still of course must add the Cutter number. They also add to shelflist cards, information for every title cataloged (accession number, location, etc.). There are some subject heading which LC abbreviates but TSL does not, so these must be changed.

If the record is contributed cataloging though clearly LC cataloging, TSL will examine it carefully, and usually accept. If it is clearly local original cataloging, they will check "very" carefully and usually accept. Certain institutions (apparently only a few) are simply not trusted. Sometimes TSL will enter a duplicate record if they have LC copy.

Since their libraries each have three separate catalogs (author, title, subject), they must always check to be sure there are indeed entries for both subject and title.

Their accessioning procedure was modified (beginning January 7, 1975). It had consisted of stamping the accession number and property stamp, then counting. The counting was slowing the flow of work to the terminal and was duplicated at the completion of processing, so this was discontinued.

TSL has tried to select those items which have a high probability of being hits before pushing them through the terminal. The acquisition department has already selected out periodicals, added copies, and items which go into an established open entry. In establishing types of materials which have a high probability of being found, many sorts of material have been searched. There are still many items thought to be unlikely which are found.

TSL has established "standard" times of eight minutes to process a hit: search, find, modify, order cards. Some types of material take only 2.8 minutes. "Standard" for new record input is 10 minutes.

There are two types of interlibrary loan services. Information Services is primarily a borrowing service for other state agencies. The department head does the searching at the moment, but only used it 12 out of the previous 25 days averaging 11 minutes per day. She always goes to it first to verify monographs. OCLC verification appears faster. At the time of our visit, Texas locations were limited and not yet of

much value. Library Development is an essential unit of the Texas Library Communications Network. The supervisor does all the terminal searching. She searches once a day, twice if absolutely necessary, with about 10 items per day to search. She uses it for verification and for "last resort" locating. The TLCN has a "random query" routine for the largest Texas libraries which is used when all else has failed. This can be bypassed with OCLC locations (in or out of state).

D.3.3 The University of Texas At Austin (UT-Austin)

The Library of The University of Texas at Austin, under a new director of libraries, began many major changes in organization and work procedures in early 1973. Since Summer, 1972, UT-Austin has been producing cards from MARC tapes and printing via multilith. There existed a tremendous backlog of cards to be produced -- cataloging had been done, copy was prepared, books were on the shelves, but cards were not yet printed. No one seems to know exactly how large this backlog was, but an idea of its magnitude can be gained from descriptions of work-load throughout this report.

Financing was partially obtained by grants from the Board of Regents and savings in other areas. The processing rate is almost double what was predicted and this may cause financial problems.

Once the decision was made, the director put together a group to study problems of bibliographic control. Out of this group came a number of the current supervisors of operations related to OCLC and other bibliographic control processes. In April 1974, a group of seven people began training to operate the terminals; the terminals were up on July 15 and on July 24 their programs were working correctly.

The director did the original profile, and modification took place in January.

Immediately after terminal installation, processing was somewhat difficult until new routines were learned.

If expected additional (9) terminals arrive, one terminal will be devoted to interlibrary loan. Possible conversion of one branch entirely to OCLC is being considered. Inputting records for their Latin American Collection has very high priority since this is an important and unique collection available only from UT-Austin. Geology may assume high priority as well. By making UT-Austin records available through OCLC, Austin will be brought more fully into the ILL network.

At the time the OCLC decision was made, the UT data processing department had already signed a contract for IBM Video 370 terminals. (Video 370 is a text-editing program which is accessed through CRT terminals.) Programs were modified to print cards from MARC tapes so that data, input from the video terminals, can be used to produce cards, including over-typed added entries, and items (e.g., book cards) used in those branches having automated circulation control.

The Video 370 sytem (up since January 1975) is used for the card backlog, older materials, and "overflow" from OCLC. It will eventually have six diacritics to enable handling materials only presently processed through OCLC. It is expected that this system will be phased out after two years. It is used only to print cards, and no records are stored for later use.

OCLC Operations

When the terminals were first available, cards were produced for a reclassification project in the education library, making a substantial dent in the backlog (about 15,000 volumes were processed). Of course, some current material was also processed through OCLC.

The OCLC unit was established in September. At present they receive almost all incoming materials (with obvious exceptions such as serials, non-Roman alphabets, very old material). They do current material first, then piece away at the backlog. Two days a week are specifically assigned for card production of previously cataloged material (different from cataloging backlog.) They expected to eliminate their card printing backlog sometime in March, except for material they will do on the Video 370 system.

Most of their revisions of OCLC copy involve call numbers. They use LC without modification, changing local numbers when necessary except they do not use PZ3 and PZ4 at all. Since they purchase substantial fiction, this is a noticeable work-load for them. Also, the in-publication copy was a substantial activity. By and large they accept copy with little change, including that from most other institutions.

Any new entries which are input to OCLC are entered from copy, either LC or other previously prepared at UT. Little or no original cataloging from scratch is done at the terminal. Some copy, however sparse, is always available. When original cataloging is done, copy is sent to the terminal, the item goes elsewhere. At the moment, priority on original input goes to Latin American and rush orders.

Post-receipt searching is done in cataloging if the item is not found in OCLC.

Books are held in the section until cards arrive. Books for branches with automated circulation systems are held until the additional materials arrive. Cards are checked against the public catalog and authority file and only then are problems of duplication, conflicts in entry, series treatment, etc. dealt with. These problems are given only minimal attention while people are actually at the terminal.

An effort is being made now to devise a statement regarding treatment of series that is concise enough to be placed at the terminal to aid in catching some of the conflicts at that point.

At the time of our visit, the terminals were scheduled from 7:15 a.m. to 7:00 p.m. five days a week. As far as we could tell, they are actually in continual use during that time. Operators are diligent about being prepared when scheduled to use the terminal and inform a supervisor when unable to use scheduled time, thus allowing someone else the extra time.

There are enough people who like the early and late hours, at least occasionally, that scheduling for their use is not problem. The normal day is 8:00 to 5:00. However, at these unusual times the system querying time is short so work is processed faster, the hit rate is higher, and these conditions are esteemed.

There are 23 people who use the terminal at some time during each week. The most time a staff member spends is 10-12 hours per week. Maximum efficient time at a single

session is about two hours. Training time for searching is less than one day, over perhaps five sessions. Training for more complicated work depends on much more than just the terminal operations.

Once UT-Austin "finally got the routines worked out" two people were shifted from the OCLC unit to a related operation and one more clerk/typist was hired. Presently one more qualified professional is apparently needed, though this is not immediately pressing.

The staff has been "pleasantly surprised" to find the hit rate much higher than expected for material generally thought not be in the data base, i.e., older material.

There have been practically no equipment problems. Downtime was serious for two weeks after installation, and for one week in December. This has ceased.

A special section was established in September to input Latin American materials. The head of the section is a cataloger and has one full-time clerk and two to three catalogers part-time as needed. Latin American material arrives unsearched (except for backlog). They are averaging about 1/3 hits, 2/3 original cataloging. After acquiring some knowledge of what was in the data base, work was divided so that either searching or original cataloging could be done at each session. The OCLC unit has not attempted to divide the work this way. The section head would like to be able to work out arrangements to share cataloging responsibilities with other libraries which have Latin American collections.

Pre-order Searching

Five hours per week on the terminal is assigned to pre-order and rush order searching. All post-receipt searching was moved to the OCLC unit when it was created.

After experimenting with various ranges of materials, exploring what was in the data base, post-1964 imprints seemed the most well-represented. Searching primarily these materials, they average about an 80 percent hit rate. Even after verifying an entry on OCLC, order and in-process files must be checked as well. Thus, the terminal does not eliminate all the tasks involved in pre-order searching. Once a larger number of UT items are in the data base this should change.

Initially, 25 or 30 items could be searched per hour. By January, the terminal response was so slow that only 15 to 20 items could be searched per hour. They are now scheduled from 10:00 - 11:00 a.m., whereas before they had times later and earlier in the day.

Incorporating pre-order searching into the OCLC unit has been discussed but is not a priority issue at present. Volume is relatively low, and apparently, other questions about order procedures have higher priority.

Video 370 Card Production

After OCLC was available, card production from MARC tapes was kept up for a period of time, simply because of the backlog. Video 370 will be used for card production backlog, older material, and overflow from OCLC. They expect to phase out Video 370 in about two years.

Filing

The OCLC unit releases cards every other Monday. They try to have a full two weeks worth of cards interfiled before sending them out. There is a filing backlog of 150,000 cards but this is not OCLC output because that is always filed first. Video 370 output will arrive in the filing section twice a week. It will be partially pre-filed by the computer. The library is interviewing now (January 1975) for 12 new half-time filers.

D.3.4 Academic Library A

This library is currently in the minimal change* stage but is beginning to evolve in response to experience. Some staff members are keeping track of search-and-processing rates. For example the head of the order department points out it is seldom possible to get as many as 30 items through the terminal for pre-order searching; a library assistant who is authorized to make revisions and order cards says that under "good conditions" such as already having the OCLC number or LC card number, she can process 14-15 items per hour, but searching on search keys takes longer. (Since searching on keys is all that can be done on pre-order searching, response time must be particularly fast to process 30 items per hour.)

The technical services staff has been cut by five over the past five years and is to be cut by one more at the end of June.

The Director of Technical Processes would like to have more frequent and regularly scheduled training/information sessions conducted by IUC and would also like to see active user groups established.

D.3.5 Academic Library B

This library went through a lot of early changes, but does not appear to be continuing change. Very little pre-order searching is currently being done, primarily due to limited ordering. Receipts of gifts appear to be steady and rather frequent. These must be searched. Students do initial searching, and write OCLC and/or LC card numbers on the slip for each item. A cataloger then checks the shelf-list and later goes to the terminal to produce cards. Some students have been trained to do input from filled-out worksheets, but none are authorized to produce cards.

Within a few months after the system was available, the library adopted LC subject headings. They are currently inputting entries for a special collection which they wish to make available to other libraries. Eventually they plan to have all of their collection in the data base.

With the introduction of OCLC, the library was able to reduce professional staff by .5 FTE. They have also eliminated their Xerox card producing system.

Although this library depends heavily upon ILL, little or no use of OCLC is made for this purpose.

D.3.6 Academic Library C

This library is undergoing evolutionary changes* in response to the system. Just prior to OCLC introduction a new cataloging division head was hired, hence prior planning was somewhat limited.

Especially interested in library cooperation, the introduction of OCLC was viewed as a major impetus in that direction. Evidence of this seems clear from increased interlibrary loan (both lending and borrowing) due to OCLC.

In pre-order searching OCLC is searched immediately after searching the official catalog and outstanding order file. Proof-slip subscriptions have been discontinued.

Basically, records are accepted as is if from an LC cataloging source. If not, then acceptance is contingent upon the record itself and the contributing institution.

D.3.7 Academic Library D

This library is also undergoing evolutionary changes,* some of which are not directly attributable to OCLC. Much has been done in an effort to get the system to handle as much as possible. The technical processing department has been analyzed extensively over the past few years but few changes appear to be specific results of this analysis.

Emphasis has been placed on evaluation of the OCLC system and in establishing a suitable organization around the system. Presently card production of LC cataloging records in the OCLC system is done by post-ordering bibliographic searchers. If more than minor revisions are necessary items are forwarded to catalogers for review. Priority for processing and inputting special collections was also notable here.

Inital doubts and criticisms concerning the system seem to have been dissipated by the performance of OCLC.

D.3.8 Academic Library E

Evolutionary changes* are presently taking place here.

The terminal is in near full capacity use. Special pre-cautions have been taken to insure that staff will be available, if necessary, for early and late operating hours. Terminal use is devoted almost exclusively to cataloging purposes.

So far no pre-order or ILL searching is done at the terminal unless no verification for the publication can be found elsewhere. This will hopefully be altered with an additional terminal as a reference tool, as well as for interlibrary loan.

D.3.9 Public Library A

Minimal changes* had been made at the time of our site visit. Administratively, the OCLC staff is not a part of the cataloging section. Regular cataloging staff use the terminal infrequently. This may be the reason many cards which have been received do not adhere to local cataloging policies. There was considerable distrust of the system before installation. This distrust remains.

Cards which are received often need to be unsorted because of internal procedures which require that cards accompany the book. A notable complaint was a growing backlog which was non-existent before the introduction of OCLC. Despite terminal availability, there remains a great dependence on manual systems and maunal card production.

D.3.10 Public Library B

Minimal* changes had taken place here at the time of our site visit. Because of the amount of revision necessary on pre-cataloged items and commercial card services, (a large part of their receipts), the staff was enthused about OCLC's pre-production revision capabilities.

Because of the tight scheduling already initiated, down time and slow response time were considered exceptionally frustrating. This was particularly evident when expected volume was not processed within a specifically assigned time. Down time, also, required additional administrative time to assign alternate tasks.

Generally, though, there was much optimism about the system's capabilities. Too, the terminal has become a focal point of outside interest and enthusiasm.

*See Section D.2.8 on "Changes Made After Installation."

AC/AV is an acronym for added copy/added volume.

Accept specifically relates to OCLC records produced without modification (with the exception of cutter numbers).

Added copy/added volume applies to additional copies or further volumes of a title which has previously been cataloged by the library. Generally, the main entry and shelf list card (occasionally the Kardex record) need only minor annotations to indicate that the item has arrived. Then the copy is ready for physical processing. For the purposes of this study, volumes which needed extra processing, (i.e., additional cards) were not included in this category, but rather under new titles. An added copy/added volume is usually considered a part of the title of the original copy or volume.

AMIGOS Bibliographical Council is the expanded IUC/OCLC bibliographic network.

Adjusted find ratio see Find ratios

Authority cards include subject cross-reference cards, directional and description cards, though they may be filed in the public catalog. Also included are those cards generally termed authority cards which control and maintain uniformity in the use of main entry, subject headings, cross-references, etc. within the library catalog. Authority cards were considered a part of total card production in determining labor and card costs.

Average monthly labor costs are defined as the total direct labor cost (including fringe benefits) spent on specific activities over an "average" month during data collection. In calculating weekly costs (Form #3) were extrapolated to monthly basis (by a factor of n/5, where n is the number of working days in the month) and combined with November totals. Data were then divided by the months represented and the number of reporting institutions. Specifically,

Average monthly labor cost =

where C = direct labor cost of activity i

n = 5, for November; number of working days for December - May

m = number of months for which reports received

x = the number of reporting institutions

Average monthly staff time is defined as the total time spent by all staff on specific activities over the "average" month. In calculations, weekly data (form #3) for December through May were extrapolated to monthly basis (by a factor of n/5 where n = the number of working days in the month) and combined with November totals. Data were then divided by the months represented and the number of reporting institutions.

Specifically:

$$\text{Average monthly staff time} = \frac{T_i \cdot n}{5 \cdot m \cdot x}$$

where T_i = time devoted to activity i,

n = 5 for November; the number of working d in the month for December - May

m = number of months for which reports were received

x = the number of reporting institutions

Bibliographic searching includes the searching and verifying of bibliographical information (except on OCLC); also locating cataloging copy or copy closely approximating titles to be cataloged. This includes searching proof slip files, NUC, or the LC catalog of printed cards to verify bibliographic data for cataloging input and card reproduction.

Card distribution includes the checking and distributing of cards to appropriate agencies. As used in this report it specifically refers to cards received from OCLC, checked for accuracy and forwarded to appropriate personnel, departments or branches. Calculations for card distribution labor costs and time were derived by dividing total cost and time spent in this activity over total card receipts from OCLC.

Card production encompasses all manual production or reproduction of catalog, shelf list or authority cards. A master card is sometimes typed, to be used in reproducing sets of unit cards or a complete set of cards is typed. A close copy may be modified, if little modification is required. The modified copy then serves as a master card for reproduction of card sets. Also included is proofreading cards or master to correct any typing errors.

If some method of card reproduction is used to duplicate a set of catalog cards, maintenance of equipment is included if done by technical processing staff. Reproduced cards are sorted into sets after reproduction (and cut, if necessary). The call number is then typed on cards in the set; established added entries are typed at the top of cards in the set; the shelf list card is typed. Finally, cards are revised to verify accuracy of typing, both of call number and added entries.

Catalog card processing covers those tasks involved in the physical processing of cards including production, filing and file maintenance.

Catalog cards are those cards used in the library's public catalogs (including branches) for use by patrons, as well as staff, in locating specific works or works within a specific subject or by a specific author.

Cataloging generally refers to those tasks involved in classification, description and control of titles. Also considered part of the cataloging function are revisions, shelf list checking and authority establishment. This only includes cataloging done within the formal cataloging department of the main library.

Cataloging at terminal see Routine cataloging from OCLC records.

Cataloging from OCLC records see Routine cataloging from OCLC records.

Corrected find ratio see Find ratios.

Data Base as used in this report specifically refers to the records available in the OCLC data base. In discussing scope of the data base, subject and date ranges of publications for which records are available are explored.

Error, duplicate record reporting, etc. involves the process whereby entries as they appear on the OCLC terminal are corrected, revised or updated. Correspondence with OCLC concerning library profile, cataloging specifications and other OCLC-related activities are typed, mailed, sent and received. This is a task performed away from the terminal.

FTE is an acronym for full-time equivalency denoting a forty hour week as a unit of measurement unless otherwise specified.

Filled request refers to interlibrary loan requests for which the requested material was located and supplied by the queried institution.

Final processing pertains to tasks necessary in post-cataloging such as physical processing or withdrawal of an item.

Find ratios achieved in searching the OCLC base for cataloging records are defined as the number of appropriate records found in relation to the number of searches made. Three variations of the "find" ratio were considered. The simple "find" ratio is derived directly from raw data without consideration of either records rejected or held. If only utilized or "valuable" records are to be considered finds, then some adjustment is necessary for rejected records. Rejection, though, does not necessarily indicate a faulty or unuseful record. Hence, these records were eliminated from both search (denominator) and find (numerator) totals.

e.g., $\frac{F-R}{S-R}$ where F equals the number of records found; R, the number of rejected records; S, the number of searches

Further refinement is necessitated by the practice of holding or "saving" records. If holds may be characterized as items retrieved by OCLC number or from save files rather than by normal search routines then they inflate the "find" ratio significantly, since they are items which have already been searched and are known to be present. The adjusted "find" ratio is deduced by subtracting holds and rejects from both search and find totals.

e.g., $\frac{F-R-H}{S-R-H}$ where H indicates the number of holds

Find ratios employed in bibliographic tool comparisons (i.e., for ordering and interlibrary loan searches) were the simple find ratio indicated above, i.e., F/S.

Fringe benefits see Salary costs.

Hit in OCLC terminology, means a record used for the first time for catalog and production by an individual library, where the record source is not that library.

Holds refer to those records found, possibly modified, and placed in save files or from which the OCLC number is noted but cards are not produced.

Humanities includes philosophy, literature and the fine arts.

ILL is an acronym for interlibrary loan.

IUC is an acronym for the Interuniversity Council of the North Texas area.

Index of disposition refers only to those records found in the data base for cataloging purposes. Divided into five specific categories (excluding unreported) this is the ratio of record manipulation (accept, revise, reject, etc.) to the total records used.

Index of record utilization is the ratio of searches of the date base to the total searches made.

Index of time utilization is the ratio of time spent on specific OCLC uses over the total terminal time used.

Input is information fed into an automated system. For the purposes of this study, input ordinarily refers to the entry of data into the OCLC data base. Input is divided into two specific types for analysis: original cataloging and routine cataloging. Original cataloging input is that derived from local catalogers while routine cataloging input is defined as input of LC cataloging data.

Interlibrary loan is a formal service provided by the library which borrows materials from other institutions for local patrons, and correspondingly, loans materials to other libraries.

Interlibrary loan request refers to those requests made by patrons for materials not available from the library, which must be borrowed from another library (see also filled request).

Item as used in this report refers to record, volume, or search as is appropriate to the context. It is used in instances where distinction is either unnecessary or unknown.

LC or commercial cards are those cards procured from commercial services outside the library. These cards generally contain all information necessary to process a title.

Locating a lending agency pertains to ILL searching done for purposes of finding an institution which owns requested material in order to borrow the material. This may entail searching union catalogs and numeric registers which cite owners of particular titles.

Manual processing refers to the cataloging of materials without the support of any automated or computer-based system. In this report manual processing is generally contrasted with processing which includes the use of the OCLC system.

Manual system refers specifically to the control portion of the parallel operations conducted at Dallas Public Library. That is, the manual processing of materials conducted as a comparison to the OCLC system. This system approximated as closely as possible pre-OCLC operations.

Monographs are limited to those works which could be entered into OCLC as monographs. Normally this would be a publication that is complete in one or more volumes pertaining to a particular topic or single story line. A monograph has a unique description and classification and does not become a part of a serial set. For the purposes of this study, monograph should take on its fullest meaning, extending to all literatures which are cataloged as monographs by the individual library. This could include collected works, children's books, fiction, etc., depending upon the processing. Monographic serials fall under this jurisdiction if individual members are cataloged as monographs and not under the serial designation. This category did not include music, maps, or other forms of non-monographic materials, regardless of processing procedures assigned.

NUC is an acronym for the National Union Catalog.

National Union Catalog is cumulated by the Library of Congress to provide cataloging and location information for titles.

New editions, revisions, etc. are considered to be those revisions and new editions of titles already in the libraries' holdings and for which only annotations are made upon presently held catalog cards. For the purpose of this study, new editions and revisions which require the production or procurement of new catalog cards were not included in this class.

New title, for the purposes of this study, was applied to all titles for which new catalog cards were either ordered or produced. This would include added copies for which cards were ordered (as for a branch library) and new editions or revisions for which new cards were ordered or produced. This, then, would be a broader inclusion than the normally held definition of a new title, that is, a title which has not previously been processed or cataloged by the library.

Non-monographic refers to all materials, including serials, which are not processed as monographs (e.g., audio-visual materials, microfilm, etc.).

OCLC is an acronym for Ohio College Library Center. OCLC represents, in the context of this report, the terminal tie-in to the Ohio College Library Center, along with the services provided according to the IUC/OCLC contract.

OCLC terminal use is considered to be all time spent at the terminal for purposes cited in the following definitions of terminal uses:

1. Cataloging from OCLC records is the search of the OCLC data base for cataloging records. If the record is found, cataloging information is adjusted to the library's specifications and cards are ordered.

2. Input-original cataloging is considered to be the entry of cataloging data supplied by catalogers in the library and not from LC copy. This type of use would only be made in instances where an original search (type 1) had been unsuccessful.

3. Input-routine cataloging is the entry of records from an LC cataloging source where an original search (type 1) had been unsuccessful.

4. Record updates refers to the input of additional information to a record already in the data base (e.g., notification of receipt of additional copies). Also included is the request for additional cards. This is explicity different from record updates as used by OCLC, which excludes any card production and includes primarily shelf list conversion, i.e., adding a libraries holdings to records already in the OCLC data base, which does not call for card production.

5. Order department use refers to searching of the OCLC data base by the order department as part of its pre-order or post-order routines.

6. ILL department use encompasses those searches of the data base for bibliographic and location information necessary for interlibrary loan requests.

7. Other includes training, demonstrations and other types of use considered excluded from the above cited activities.

Time and volume figures for OCLC use were calculated by summing all reported uses and dividing by the number of terminal days for which reports were received. Over the 25 sample days, reports were received for 689 of the 750 total terminal days. Reports reflecting no use are included in total utilization averages, and excluded from discussion of individual usages.

Average daily volume processed when used in context of OCLC use, indicates the number of records searched on the data base. No distinction is made between successful and unsuccessful searches (i.e., found and not found).

Average daily time at terminal refers to the number of minutes spent using one terminal, on the average. No distinction is made between those libraries having one terminal or two. In other words, this is per terminal average not a per library average.

Original cataloging is descriptive cataloging, subject analysis, classification, and authority work (i.e., name and subject, etc.) for titles for which no LC copy is available. A cataloger prepares a work form or work sheet to be used in typing copy for catalog card reproduction or for OCLC input.

Participating libraries reference the 25 libraries in Texas and New Mexico participating in this study.

Pre-cataloging designates those tasks prerequisite to routine, original or OCLC cataloging.

Pre-catalog card/card copy routines includes ordering, receiving, arranging and matching with item, commercial or LC cards, proof slips or card copy.

Prefiling of catalog cards includes the sorting and alphabetizing of card sets for new titles, main entry and analytic cards for added volumes, cards for titles recataloged or reclassified, cards withdrawn to update entry, etc. These cards are arranged in 26 groups according to the first letter of the first word of catalog entry with additional sortings of each subgroup by 2nd or 3rd letter, and the final arrangement of each subgroup in alphabetic order, word by word, to the end of the entry in each card.

Pre-OCLC is the time prior to which the individual library had the capability of cataloging, producing cards and entering data into the OCLC system.

Pre-order searching is the verification of bibliographic information, including publisher, edition, vendor, etc. without book in hand. Also covered by this term would be checking to insure aganist duplication of an item.

Processing times as noted in this report specifically means the time from receipt of an item to the cataloging department to receipt of produced cards. In calculating processing times, only working days (Monday through Friday) were considered in actual count.

Post-order searching is the verification of bibliographic information after an item has been ordered. Also included are post-receipt searches made by the order department.

Public catalog is the card catalog maintained for use by library patrons.

Publishers' lists are those listings provided by publishers indicating their publications and prices.

Record updates as used in this report refers to the input of additional information at the terminal to a record already in the data base (e.g., notification of receipt of additional copies, withdrawals). Also included is the production for additional cards. This is explicity different from record updates as used by OCLC, which excludes any card production and includes primarily shelf list conversion, i.e., adding a library's holdings to records already in the OCLC data base, which does not call for card production.

Reject as used in this report refers to those records found in cataloging search of OCLC but not used due to poor cataloging, serials cataloging, music score, etc.

Requests specifically refers to all those interlibrary loan requests for material which could not be located nor made available to the requesting patron from their own library collection.

Revise as used in the context of OCLC records, refers to the modification of OCLC records prior to card production. This was divided into two categories of revision: major and other. Major revisions were considered to be classification, subject, or added entry revisions. Any record requiring away from terminal research for revision purposes was also considered to fall into this category. Other revisions were considered to be minor revisions such as spacing, spelling, abbreviations, etc.

Revising is considered the review of cataloging and classification by someone other than the cataloger himself to insure correctness and appropriateness. Corrections or changes are made as necessary.

Routine cataloging is the classification and description of an item using LC cards, LC-NUC copy, automated cataloging systems or other pre-cataloged card systems. Generally, routine cataloging with cards is distinguished from routine cataloging using OCLC records. Using OCLC records is the use of an already existing OCLC record for classification, description and card production.

Routine cataloging with automated systems (other than OCLC) generally refers to the use of a computer data base which is searched for cataloging information. If a title being searched is located in the data base, the book is classified and described by information provided. If the title is not found it is subjected to either original cataloging or routine cataloging with cards or the OCLC process. For analysis purposes, time devoted to this activity was combined with routine cataloging with cards or card copy.

Routine cataloging with cards or card copy is the procedure followed when complete cataloging information is identified using LC or other cards or card copy outside OCLC. Upon receipt of both book and cataloging information (LC card set, proof slip, commercial cards, etc.) the information is usually checked against the book to insure that the cards do indeed match. Titles are then classified according to the policies of the library, checking when necessary the public catalog, established subjects, etc., and the appropriate modifications are made. The call number is noted in the book and the cards and book are forwarded to the necessary follow-up processes.

Routine cataloging using OCLC encompasses the action taken upon receipt of a publication by the cataloging department whereupon the title is searched in the OCLC data base. If a catalog record exists the record may be accepted as is, revised, rejected or held. If the record is accepted, appropriate cutter numbers are affixed to ensure uniqueness of classification number within library and cards are produced in accordance with profiles of receiving catalogs within the library. If the record is revised, classification, subject, other major or simply minor revisions may be made at the terminal. Then the record is either placed in save files or cards are produced. The record may be rejected, that is, no production of cards are made and no attempt to further employ the record is made. The record may be held for future recall and production either by noting the OCLC record number or placing it in save files.

Salary costs and hourly rates were derived from annual salaries and fringe benefits generally calculated on a 2,000 hour year. Fringe benefits were considered to be all expenditures made by the library, administration or state government above and beyond actual salary payments for the exclusive benefit of the employee. Hence, all contributions beyond those of the employee to insurance, retirement, etc. were included as a fringe benefit. Where salary information was not available, rates of employee counterparts in like institutions were used. (See also unit costs, and unit times).

Science and Technology includes physics, biology, natural sciences, medicine and engineering.

Serials for the purposes of this study were considered to be all those publications which the library processes as a "serial." Generally, this would represent a series of publications issued under the same name, consecutively numbered and appearing at pre-designated intervals. Characteristically, a serial is an open-ended or continuous publication. For the most part, it is a work of several contributors. This does not, however, include serials reprinted in monographic form. Monographic serials fall into this category if processed as a serial.

Shelf list cards are those cards produced for internal library purposes, generally filed by call number. These cards control holdings and prevent duplicate classification numbers.

Shelf list checking is the examination of the shelf list catalog to prevent duplicate assignments of a call number. A temporary shelf list slip/card is prepared and filed to reserve the call number while the book is being processed, and before a permanent shelf list card is prepared and filed.

Simple find ratio see Find ratios.

Social Sciences includes sociology, psychology, anthropology, economics, political sciences and history.

TNR is an acronym for the Texas Numeric Register.

Terminal use as used in this report refers to all time spent actively using the OCLC terminal for uses specified under OCLC use (cataloging, record updating, etc.).

Texas Numeric Register is a numerical listing of holdings in Texas libraries. Normally, this is used for purposes of interlibrary loan.

Thruput indicates the number of items, i.e., volumes, titles or records, put through a specific process.

Titles are distinct names of printed material, excluding duplicates and variants, which indicates either the monograph or serial set as a unique entity. Generally, a title has a unique classification and cutter numbers within the library to distinguish it from other titles held.

Unit cost represents the cost to process the "average" item through particular activities. Obviously, resources, demands, and internal processing technologies vary widely from library to library, as do associated costs for outputs. Logically, difficulty arises in comparing the small library with seven staff members to a larger library having ten professionals, twenty clerks, and several part-time student workers. Even though both may catalog books and records, order materials and maintain an ILL section, the scale of operations itself dictates a difference in costs.*

A "unit cost" is an average cost. That is, given a total labor cost for task a, say TC_a, and some measurement of the volume or "throughput" of that task within a given time period, say V_a, then the unit cost for that task, UC_a, is represented simply by

$$UC = \frac{TC_a}{V_a}$$

For example, when speaking of cataloging, the unit cost represents the average cost per item processed through the library cataloging section during the time period under study. More specifically, this cost is derived from the following data:

- Unit time
- Estimated volume thruput
- Direct salary cost

The unit time as discussed later represents the average time per item spent in one or several activities. In order to derive unit cost and time, the volume thruput (i.e., items subjected to this process) had to be estimated from month-end statistics. With the exception of November, all month-end data was reduced by a factor of (n-5)/n where n is the number of working days in the month. This allowed for correction for the sampling of one week per month. Direct salary cost was derived by multiplying the time spent in each activity by the salary/wage of each individual performing that activity. For those persons for whom no salary information was available, salaries were estimated from average salaries of similar positions in similarly sized libraries. Fringe benefits such as insurance, etc., were also included in computation of these salaries.

*This is not to imply that "scale of operations" is the only reason for differences in costs.

Using these data, unit cost calculations were made by multiplying total time spent over the sample weeks by salary costs per unit of time, and dividing by volume thruput. These calculations were made for a number of activities.

Unit time (for unit time computations of OCLC utilization see OCLC) corresponds to unit cost, representing the "average" time to process an item through a particular activity or activities. This time is derived from

- Total staff time spent in an activity
- Estimated volume thruput.

In order to derive unit time, the volume thruput (i.e., items subjected to this process or activity) must be established. This was ascertained from month-end statistics in November. For months following, an estimate had to be achieved from month-end data to correlate to the week-long sample from which time data was gathered. This factor varied and basically followed the following formula:

$\gamma = 5/n$ for all months December-May, where
n = number of working days in a month

$\gamma = 1$ for November

Working days were held to be Monday through Friday, despite the fact that work could be performed on Saturday and Sunday. The rationale was that since generally the working week is no more than 40 hours, this formula more precisely approximated the actual proportion. Legal and academic holidays were also excluded where appropriate.

Unit time was computed, based on these data, by dividing total staff time spent on an activity over the sample weeks by the estimated volume thruput.

Volumes are the physical units of printed work, including bound periodicals and cataloged government documents, but excluding all microfilm.